A STUDY OF THE SELECTED DIFFERENCES BETWEEN NORMALLY PROGRESSING AND EDUCATIONALLY RETARDED PUPILS ENROLLED IN THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

A THESIS

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CHAPTER I

INTRODUCTION

Rationale.--Actual research on the school progress of the learner began around the beginning of the twentieth century. Retardation was the phase which attracted the attention of the research workers and many studies of the topic appeared in literature in the latter part of the first decade of the century. In general, the studies indicated that retardation of the learner was much greater than acceleration and, due to its frequency, was a serious problem.

More recently, studies seem to indicate that the percentage of retardation is decreasing, and the percentage of normal progress is increasing. However, there is still need for more extensive research on the problem of learner retardation.

In actual cost excessive retardation may reduce financial outlay by discouraging pupils and causing their elimination from school; in terms of educational services retardation results in a loss. When a pupil progresses normally he becomes a high school graduate in twelve years. Each year of retardation represents additional cost in producing a graduate. Thus in every case where a pupil continues until graduation, the costs of educating the pupil is increases by retardation.[1]

As a result of the terminology used in referring to the retarded pupil, beginning students have become confused with such different terms used as feebleminded, mentally deficient, slow learner, amentia,

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[1] Walter S. Monroe (ed.), Encyclopedia of Educational Research (New York, 1950).

dementia and mentally handicapped.

Children with low intelligence differ in degree of mental deficit. Consequently, one of the common classifications of such children is based upon the degree of the defect.[1] For this purpose the subdivisions, idiot, imbecile, moron, borderline child and the dull normal child have been used.

The classifications for educational purposes, as stated by Kirk and Johnson[2] are feeble-minded, the mentally handicapped, and the slow learner.

This study did not attempt to evaluate the causes inherent in the problems of "pupil elimination," "learner retardation," and the social implications resident in them. But, rather, this research will be concerned with finding and appraising the significant differences, if any, in the intelligence, achievement and the personality test performances of normally progressing and educationally retarded pupils of the Emery Street High School, Dalton, Georgia.

Statement of the Problem.--The problem involved in this study was to ascertain the tested differences, if any, in intelligence, academic achievement and personality of normally progressing and educationally retarded pupils of the Emery Street High School, Dalton, Georgia.

Scope and Limitation of Study.--The primary concern of this research has been to identity the indices of central tendency and variability for

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1 S. A. Kirk and G. O. Johnson, Educating the Retarded Child, (New York, 1951), p. 3.

2 Ibid., p. 7.

intelligence, school achievement, and personality for a group of "normally progressing" and "educationally retarded" seventh-graders, with reference to whatever "significant differences" might be observed between the performances of these two groups of pupils on the variables of intelligence, achievement, and personality, together with whatever relationships among the paired variables of the three tests might be determined. On the other hand, two specific limitations of this research were inherent in its design, to wit: (a) that whatever correlations would be identified were not to be investigated and analyzed as to any causative factors involved for the respective paired variables among the three tests; and (b) that the interpretation of the data would be restricted to the identification of educational implications, but not to formulation of any specific pattern(s) of curricular reorganization and/or instructional methodology.

Purpose of the Study.--The major purpose of this research was to get a comprehensive picture of the total maturational status of the "normally progressing" and the "educationally retarded" learners in the Emery Street High School, Dalton, Georgia, 1954-1955 as reflected in the significance differences, if any, in the measures of their intelligence, achievement and personality.

More specifically, the purposes of this study were as follows:

1. To determine the central tendency and variability in intelligence of the normally progressing and educationally retarded pupils in the Emery Street High School.

2. To determine the central tendency and variability in academic achievement of the normally progressing and educationally retarded pupils in the Emery Street High School.

3. To determine the central tendency and variability in personality of the normally progressing and educationally retarded pupils in the Emery Street High School.

4. To determine the significant differences, if any, in intelligence between the group of normally progressing and educationally retarded pupils of the Emery Street High School.

5. To determine the significant differences, if any, in academic achievement between the group of normally progressing and educationally retarded pupils in the Emery Street High School.

6. To determine the significant differences, if any, in personality between the group of normally progressing and educationally retarded pupils in the Emery Street High School.

7. To ascertain the correlation, if any, between intelligence and academic achievement for the group of normally progressing pupils of the Emery Street High School.

8. To ascertain the correlation, if any, between intelligence and personality for the group of normally progressing pupils in the Emery Street High School.

9. To ascertain the correlation, if any, between personality and academic achievement for the group of normally progressing pupils in the Emery Street High School.

10. To ascertain the correlation, if any, between intelligence and academic achievement for the group of educationally retarded pupils in the Emery Street High School.

11. To ascertain the correlation, if any, between intelligence and personality for the group of educationally retarded pupils in the Emery Street High School.

12. To ascertain the correlation, if any, between personality and academic achievement for the group of educationally retarded pupils in the Emery Street High School.

13. To formulate whatever significant implications for educational theory and procedure as may be derived from the analysis and interpretation of the data.

Definition of Terms.--For the purpose of this study the terms which follow carry the meaning ascribed to them:

1. The term, "intelligence," as employed in this study refer to

traits as measured by the California Test of Mental Maturity.[1]

2. The term, "academic achievement," as employed in this study refers to the level of accomplishment as measured by the California Achievement Test.[2]

3. The term, "personality," as employed in this study refers to behavior as measured by the California Test of Personality.[3]

4. The term, "normally progressing," as employed in this study refers to those pupils of the seventh-grade who have passed from one class to another each successive year.

5. The term, "educationally retarded," as employed in this study refers to those pupils of the seventh-grade who have been denied promotion at the end of any school term, first through seventh-grade.

Locale of the Study.--Dalton, the bed spread center of the world, is located snugly in the red hills of Northwest Georgia. The city limits of Dalton are a circle, with a diameter of three miles and the center of the circle is the freight depot of the state-owned Western and Atlantic railroad, with a radius of one and one-half miles.

Several battles were fought in this vicinity during the War Between the States. General Joseph E. Johnson was in command of the confederate forces here. A monument has been erected to his memory by the United Daughters of the Confederacy.

The greatest increase of population was between 1930 and 1950. During this period the population doubled, primarily because of the

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1 E. T. Sullivan, W. W. Clark, and E. W. Tiegs, California Short-Form Test of Mental Maturity, (Elementary), Los Angles, 1950.

2 E. W. Tiegs and W. W. Clark, California Achievement Test, (Elementary), Los Angles, 1953.

3 W. W. Clark, E. W. Tiegs, and Lois Thorp, California Test of Personality, (Elementary), Los Angles, 1953.

tremendous growth of the textile industry. However, the Negro population is still comparatively small.

The textile industry, two large cotton mills, two yarn mills, and numerous bed spread, rug, and robe plants, provides employment for a small segment of the Negroes, all of whom are men. The women for the most part are employed as domestic helpers.

There are seven Negro churches in Dalton, representing the Baptist, Methodist, Presbyterian and the Church faiths. Because of the sparse population, each church has only a few members.

The enrollment of the Emery Street High School is 450 with a staff of fourteen well trained and well experienced teachers of whom 13 and 1 are holders of the bachelor's and master's degree, respectively.

Research Method.--The Descriptive-Survey Method of research, with special reference to the use of standardized test and the statistical treatment of test scores, was used to collect and interpret the data required in the conduct of this study.

Description of the Subjects.--The subjects used in this study were twenty-four "normally progressing" and 21 "educationally retarded" pupils of the seventh-grade class enrolled in the Emery Street High School, Dalton, Georgia.

In the group of 24 "normally progressing" seventh-graders there were fourteen girls and 10 boys, ranging in ages from 11 years to 12.7 years, with a mean age of 12.1 years.

In the group of 22 "educationally retarded" seventh-graders there were 13 girls and 9 boys rangining in ages from 13 years to 16 years, with a mean age of 14.1 years.

Description of the Instruments.--The purposes of this study were achieved through the administration of the selected tests chosen to measure intelligence, personality and achievement.

Personality was measured by the California Test of Personality.[1] The test was administered to both groups of normally progressing and educationally retarded pupils of the seventh-grade. This test is organized around the concept of life adjustment as a balance between personal and social adjustment. Personal adjustment is assumed to be based on feelings of personal security and social adjustment is based on feelings of social security. It is composed of twelve components for grouping of more or less specific tendencies to feel, think and act. The first half of the test is designated as Personal Adjustment consisting of the following traits: self reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies and nervous symptoms. The second half is designated as Social Adjustment composed of the following traits: social standards, social skills, anti-social tendencies, family relations, school relations, occupation relation and community relations.

Intelligence was measured by the California Short-Form Test of Mental Maturity[2] which was administered to both groups of normally progressing and educationally retarded pupils of the seventh-grade. This test has been devised to show the status of each individual in language,

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1 W. W. Clark, E. W. Tiegs, and Louis P. Thorpe, California Test of Personality, Elementary), Los Angles, 1953.

2 E. T. Sullivan, W. W. Clarke, and E. W. Tiegs, California Short-Form Test of Mental Maturity, (Elementary), Los Angles, 1953.

non-language, and total mental age and intelligence quotient. It provides four major factors: (1) spatial relationships, which are designed to measure the status of certain aspects of thinking that involve orientation in space, (2) logical reasoning, which require a decision or a choice of responses, (3) numerical reasoning, which involves the recognition and use of likenesses and differences, and the making of inferences with special respect to quanitative or number situations and problems, (4) verbal concepts in which ideas and meanings begin as perceptions which enter consciousness through the senses and finally emerge as concepts which are useful in thinking.

Achievement was measured by the California Achievement Tests[1] which were administered to both groups of normally progressing and educationally retarded pupils of the seventh-grade. This is an instrument for accurately and objectively measuring pupils achievement in fundamental reading, arithmetic, and language skills. It is standardized, and each item has been selected for its diagnostic value. The reading test consists of Reading Vocabulary and Reading Comprehension; the arithmetic test consists of Arithmetic Reasoning and Arithmetic Fundamentals; the language test consists of Mechanic of English, and Grammar.

Procedures.--The data of this study have been gathered, analyzed, and presented as follows:

1. A review, summation, and presentation of related literature pertinent to the research will be done.

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[1] E. W. Tiegs and W. W. Clarke, California Achievement Test, (Elementary), Los Angles, 1953.

2. The orientation of the subjects to the nature and purposes of this research.

3. The administration of the three tests: The California Test of Mental Maturity, California Achievement Test and The California Test of Personality.

4. The assemblage of the test data into appropriate tables and figures as the basis for the analysis and interpretation required by the research.

5. Computations of the essential statistical measures, such as: The mean, standard deviation, standard error or the mean, standard error of the difference between means, Fisher's "t" and the standard error of the difference between two r's.

6. Findings, conclusions, implications and recommendations as derived from the data will be presented in the finished thesis.

Collection of the Data.--The data used in this study were obtained from three different tests administered to 24 normally progressing and twenty-two educationally retarded seventh-grade pupils of the Emery Street High School, Dalton, Georgia.

Three days were given for the administration of the instruments used to gather the data for this study. On Thursday morning, September 23, 1954, at 10:00 o'clock, the California Test of Personality[1] was administered. Friday morning, September 24, at 10:00 o'clock, the California Test of Mental Maturity[2] was administered. Monday afternoon, September 27, 1954 at 2:00 o'clock p.m., the California Test of Achievement[3] was administered. The total testing time was four hours and eight minutes.

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1 W. W. Clark, E. W. Tiegs, and Louis P. Thorpe, California Test of Personality, (Elementary), Los Angles, 1953.

2 E. T. Sullivan, W. W. Clarke, and E. W. Tiegs, California Short-Form Test of Mental Maturity, (Elementary), Los Angles, 1953.

3 E. W. Tiegs and W. W. Clarke, California Achievement Test, (Elementary), Los Angles, 1953.

The tests were given in the seventh-grade classroom by the writer. Subjects were arranged in single seats with no definite order of the two groups. Each pupil was given two ordinary lead pencils with erasers attached and one sheet of scratch paper. The writer had at her convenience, extra pencils, extra erasers, an extra copy of test booklet for demonstration and a stop watch. After checking to see that all examinees had all materials required, the test booklets were distributed face-up. The manual of direction was followed.

Value of the Study.--Probable values derived from this study and similiar researches are characterized below:

1. To arrive at a clear picture of the level of development in intelligence, school achievement, and personality which are characteristics of the "normally progressing" and "educationally retarded" learner in the Emery Street High School.

2. To identify those aspects of intelligence, achievement and personality which are most troublesome to the "normally progressing" and "educationally retarded" learner, respectively.

3. To serve as a frame-of-reference for the formulation of educational implications.

4. To suggest more fruitful approaches to research in the area of the educationally retarded learner.

CHAPTER II

RELATED LITERATURE

Introductory Statement.--In this chapter, the writer has chosen to review the literature pertinent to the problems of this research under four major categories, to wit:

1. The problem of educational retardation.

2. The theories and studies concerned with Intelligence.

3. The theories and studies concerned with Achievement.

4. The theories and studies concerned with Personality.

Significant abstracted statements from the writings of the authorities in these fields will be cited as the frame-of-reference for each of the conceptual areas.

The Problem of Educational Retardation.--The point-of-view of this researcher as to the nature and import of educational retardation is to be found reflected in the significant excerpts to follow.

Cole[1] states in connection with the problem of retardation:

> . . . For the last twenty years investigators have been proving that retardation is not the answer. The proof is of two sorts. The earlier type, in point of time, showed clearly that pupils who repeated grades knew no more at the end of the second or third time through than at the end of the first time. That is, retardation had failed in its primary purpose.

Further, Cole[2] affirms:

> Naturally, there are always a few cases in which an individual

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[1] Luella Cole, Psychology of Adolesence, (New York, 1954), p. 596.

[2] Ibid., p. 596.

pupil does make normal progress, usually because he is a normal child who was for some reason absent a great deal, or because some inhibiting cause such as inadequate eyesight has been eliminated, or because he has been in violent conflict with his teacher. In general, however, the cause which prevented pupils form learning on the first trip were still operative, and the second was just wasted time so far as educational achievement is concerned.

Caswell[1] states the case of chronological age in normal school progress thusly:

> Retardation is the extent to which a pupil is behind the grade in which he would normally fall by chronological age. It may result from late entrance to school or from non-promotion, or from a combination of both. Normal progress is the extent to which a pupil falls by chronological age.

Bert and Kronenberg[2] describe Retardation as follows:

> Retardation is usually associated with low intelligence and may be the direct or indirect cause of elimination. If the school is properly articulated there should be little retardation. Elimination and retardation begin in the elementary school. Those eliminated during this period never reach the secondary school; those retarded enter at an age above normal.

Lee and Lee[3] describe the impact of age upon school progress thusly:

> Children in any grade who are two or more than two years older than the average for that grade are considered retarded. Two years give all the leeway which is of advantage in adjusting to various mentalities. Beyond that point, discrepancy in age tend to differentiate and set off the pupils too definitely from the rest of the group. He loses his feeling of belonging, and through that his sense of security and sense of personal worth. Questions and remarks of others as to his age and grade give him a feeling of failure and undetermine his self-confidence.

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1 Hollis Caswell, Education in the Elementary School, (Atlanta, 1942), pp. 249-250.

2 Rudyard Bert, Henry Kronenberg, Principles of Secondary Education, (New York, 1941), p. 171.

3 J. Murray Lee and Doris May Lee, The Child and His Curriculum, (New York, 1950), p. 105.

It is from this point-of-view the writer thinks of educationally retarded pupils.

Theories and Studies of Intelligence.--This section of the review of the related literature will deal with the theories and studies concerning intelligence. Psychologists do not agree concerning the nature of intelligence.[1] There have been however many authorities who made investigations attempting to define intelligence.

Some of the briefer statements beginning with one of Binet are: (a) Intelligence is judgment, or common sense, iniative, the ability to adapt one's self.[2] (b) According to Burt: Voluntary attention is the essential factor of general intelligence.[3] (c) Terman says that an individual is intelligent in proportion as he is able to carry on abstract thinking.[4] (d) Stern says that intelligence is the general capacity of an individual consciously to adjust his thinking to new requirements; it is general mental adaptability to new problems and conditions of life.[5]

Dickens[6] reports that of several hundred first grade children most

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[1] Intelligence and its Measurements, "A Symposium," Journal of Educational Psychology, Vol. XII (March-May, 1921), pp. 123-127.

[2] F. W. Dearborn, Intelligence Tests, (Boston, 1938), pp. 93-94.

[3] B. S. Burt, "Summary of Literature on the Determiners of the Intelligence Quotients and the Educational Quotients," 27th Year Book National Society for the Study of Education, (Bloomington, Illinois, 1938), Part II, pp. 248-253.

[4] Henry H. Goddard, "What is Intelligence," Journal of Social Psychology, The Journal Press, Provincetown, Massachusetts, 1946, pp. 51-57.

[5] Ibid., pp. 51-57.

[6] Charles W. St. John, Educational Achievement in Relation to Intelligence, (Cambridge, 1930), p. 10.

of those who failed had mental ages below six years, and that those rating low in intelligence tests were very slow in learning to read.

Hollingworth and Cobb[1] studied a group of 20 public elementary school pupils averaging 165 I. Q. and another group of 20 averaging 146 I. Q. The two highly intelligent groups being matched for chronological age, home environment, and certain other factors.

> Both groups were segregated for special opportunity classes at the same early age and were there after taught in the same school under the same administrative auspices. Here they both had access to the same special library, were taught under the same policy of freedom of progress according to capacity, and enjoyed all special privileges and opportunities provided.

The findings of this study showed that equalization of educational opportunity, did not equalize achievement, the median achievement of the more intelligent of these two superior groups being distinctly better as indicated by all but a very few of the many achievement tests used. These findings also seem to establish unusually clear the direct relationship between achievement and intelligence.

H. F. Eaton[2] at the Central High School, Syracuse, New York, made a study of special classes established by pupils who had failed in various subjects. An individual Binet-Simon Test was given to each of the 20 members of a sophomore English class of repeaters. Later the Terman

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[1] L. S. Hollingworth and M. V. Cobb, "Children Clustering at 165 I. Q. and Children Clustering at 145 I. Q. Compared for Three Years in Achievement," Twenty Seventh Year Book, The National Society for the Study of Education, (Bloomington, Illinois, 1938), Part II, pp. 3-33.

[2] H. F. Eaton, "The Intelligence of Pupils Who Repeat," School and Society, XVII (May, 1939), p. 96.

group test was given to 91 pupils who were repeating various subjects. At the same time the test was given to 9 pupils who were average in their school standing. The scores of the group were translated into mental ages and the intelligence quotient determined.

The findings revealed that: first, the average students were considered above the national average in mental ability; second, the group of English specials were inferior to the group of repeaters in all subjects; third, slightly more than half of the group tested were below average high school intelligence.[1]

According to Ruth Strang[2] high intelligence is ordinarily associated with pleasing personality, since intelligence involves insight, the ability to see relationships, and the capacity to learn.

Farley[3] made a study of cumulative failures in high schools. Pupils who had been in high school for two years were divided into three groups. The first group included those pupils who had not had a single failure in high school; the second included those having one or two failures, and the third included those having three or four failures.

To determine the relation of progress through elementary school to

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[1] H. F. Eaton, "The Intelligence of Pupils Who Repeat," School and Society, XVII (May, 1939).

[2] George R. Griffith, "The Relationship Between Scholastic Achievement and Personality Adjustment of Men College Students," Journal of Applied Psychology, (October, 1945), p. 36

[3] Eugene Farley, "Regarding Repeaters: Sad Effect of Failures Upon the Child," Nation's Schools, (October, 1936), pp. 37-39.

high school work the median number of terms required to complete the first eight grades was computed for each group. The group having no failures completed the elementary grades in 16.4 terms and the group with the most failures in 17.2 terms, that having one or two failures 16.9 terms.

The finding of the study revealed that the group with no failures had the highest I. Q. and the group with the most failures had the lowest I. Q. This indicates that retardation can not compensate for a lack of scholastic ability and that retardation does not prepare pupils for high school.[1]

Billingslea[2] made a study of the tested differences in intelligence, achievement, and personality of 25 failing and 25 nor-failing pupils in the fifth, sixth, and seventh grades of Cherokee County Training School. He used the California Test of Mental Maturity, California Achievement Test, and the California Test of Personality as his measuring tools.

The findings of this study revealed that there was no significant differences found between the non-failing and failing pupils in 6 of the factors as measured by the California Test of Mental Maturity but there were significant differences found in 5 of the factors in favor of the non-failing group. It was further revealed that failing pupils were

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[1] Eugene Farley, "Regarding Repeaters: Sad Effect of Failures Upon the Child," Nation's Schools, (October, 1936),

[2] E. D. Billingslea, "A Study of the Tested Differences of Failing and Non-Failing Pupils of the Cherokee Training School," Unpublished Master's Thesis, Atlanta University, 1953.

markedly inferior to the non-failing pupils in achievement.[1]

Theories and Studies of Personality.--The review of this literature which deals with the theories and studies concerning personality as related to this problem is reviewed in this section.

Personality is not something separate and apart from ability or achievement but includes them; it refers rather to the manner and effectiveness with which the whole individual meets his personal and social problems, and indirectly the manner in which he impresses his fellows. The individual's ability and past achievement are always inevitable part of his current attempts to deal with his problems intelligently.[2]

Personality is the quality of the individual's total behavior.[3]

Personality is the total picture of an individaul's organized behavior, especially as it can be characterized by his fellow men in a consistent way.[4]

An interesting personality study was made by McElwee[5] in the second, third and fourth grades of New York City Schools. Teachers of those

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[1] E. D. Billingslea, "A Study of the Tested Differences of Failing and Non-Failing Pupils of the Cherokee Training School," Unpublished Master's Thesis, (Atlanta University, 1953).

[2] Louis P. Thorpe, Willis W. Clarke, and Ernest W. Tiegs, California Test of Personality Manual, 1951.

[3] R. S. Woodworth and D. G. Marquis, Psychology, New York, 1947.

[4] J. F. Dashiell, Fundamentals of General Psychology, Boston, 1937.

[5] Edna Willis McElwee, "A Comparison of Personality Traits of Three Hundred Accelerated, Normal, and Retarded Children," Journal of Educational Research, XXII (May, 1932), pp. 31-34.

grades were asked to select from a check list of personality traits which were characteristics of certain pupils in their immediate class.

The pupils were divided into three groups. One hundred children were selected whose work had been accelerated; 100 who had been regularly promoted; and 100 whose school progress had been retarded.

The findings of this study indicate that the pupils who had made normal progress in school seem to possess to a greater degree all desirable traits than did the retarded children. The reverse condition was true of the undersirable traits.[1]

All three groups got along well with other children. The accelerated pupils excelled in their interest in school work and in good effort. With the exception of attentiveness, they possessed all desirable traits to a greater degree and the undesirable traits to a lesser degree than the other two groups of children.[2]

The retarded children were markedly disinterested in and indifferent toward their school work. Their work was considerable less than that of the children whose school progress had been normal. Although the retarded children were the most disobedient of the three groups, they compared favorably with the children of normal progress with regards to quietness, calmness, quarrelsomeness, stubborness, excitability, and talkativeness.[3]

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[1] Edna Willis McElwee, "A Comparison of Personality Traits of Three Hundred Accelerated, Normal, and Retarded Children," Journal of Educational Research, XXII (May, 1932).

[2] Ibid.

[3] Ibid.

Norris[1] in her study of personality ratings of high school pupils, found that personality is an element of quality which greatly influences a pupil's success.

Gifted students tend to be superior in character traits and interest as well as ability, and the more superior they are, the more likely they are to make high scores on test of personality.

Lewis[2] compared a group of children selected by their teachers as being gifted, mentally retarded, and as problems. The total number of children from whom the selection was made was over 45,000, of whom the teachers selected 3,359 as retarded, 2,401 problems and 341 as gifted. The remaining 39,000 formed the normal group. All children were given tests of personality and were rated on the following character traits: dependability, friendliness, honesty, self-reliance, ambition, and happiness. The brilliant pupils were superior in every one. The normal pupils rated lower than the bright pupils but higher than the retarded ones.

William McGhee and Drayton Lewis[3] made a study of 4,797 girls and 4,264 boys taken from 36 states, 310 communities and 455 schools in the United States. The mentally superior pupils were selected from grades

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[1] Ruth Norris, "Personality Ratings of High School Pupils in Relations to Their Success in School," School Review, LII, (January, 1944), pp. 33-40.

[2] W. D. Lewis, "Some Characteristics of Children Designated as Problems, Mentally Retarded or as Genius by Teachers," Journal of Genetic Psychology, 1947, pp. 29-51.

[3] William McGhee and Drayton Lewis, "A Comparison of Certain Personality Characteristics of Mentally Superior and Mentally Retarded Children," Journal of Educational Research, (April, 1942), pp. 600-603.

four to 8 scoring in the highest 10 per oent in terms of intelligence quotient based on the Kuhlman-Anderson test. The retarded pupils were pupils who scored in the lowest 10 per oent of the same test.

McGhee and Lewis used two measures of personality in the study of personality scores on the personal Inventory and the Teaoher's Rating of their pupils for the presence of 70 designed personality traits.

The data from this study indicate that mentally retarded children are less well adjusted in personality reactions than mentally superior children.[1]

Researohers generally hold that a lack of significant difference between matched groups of normally progressing pupils and educationally retarded pupils is an argument against retardation.

Afinson[2] made a comparison of certain personality characteristics where he matohed two groups of pupils of junior high sohool age, one group oonsisting of pupils who made normal progress and the other who had experienced non-promotion in one or more semesters.

The Sigmond Block Student Questionnaire and the Bell School Inventory were used to measure personality adjustment.

The finding of this study showed that the cases did not differ appreoiably in personality adjustment.

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1 William McGhee and Drayton Lewis, "A Comparison of Certain Personality Characteristics of Mentally Superior and Mentally Retarded Children," Journal of Eduoational Research, (April, 1942), pp. 600-3.

2 R. D. Afinson, "School Progress and Pupil Adjustment," Elementary School Journal, 1941, pp. 507-514.

Gouch[1] found that socio-economic status has a positive relationship to academic achievement; and personality inventory scores have a slight negative relationship to achievement.

Sandin[2] made an investigation of the aspects of social and personal adjustments. In general, he found that educationally retarded pupils tend to choose companion from grades higher than their own and are discriminated against in the selection of study companions. This last finding did not hold true for the first grade, where retarded pupils received significantly more than their expected choices. Sandin's findings disclosed a general indicative of a less happy adjustment among retarded pupils than among normally progressing pupils.

Goodland[3] equated a group of 50 normally progressing second grade pupils with a group containing a like number of educationally retarded first-grade pupils. Two major hypotheses tested as null hypotheses, gave direction to the study:

1. There are no differences in social adjustment between retarded and normally progressing pupils.

2. There are no differences in personal adjustment between retarded and normally progressing pupils.

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1 Harrison G. Gouch, "The Relationship of Socio-Economic Status of Personality Inventory and Achievement Tests Scores," Journal of Educational Psychology XXVI, 1944, pp. 527-40.

2 Adolph Sandin, "Social and Emotional Adjustment of Regularly Promoted and Non-Promoted Pupils," Child Development Monographs, (Columbia University, 1944).

3 John I. Goodland, "Some Effects of Promotion and Non-Promotion Upon Social and Personal Adjustment of Children," Unpublished Doctor's Dissertation, (University of Chicago, 1949).

The test of personality and sociometric questions were administered both at the beginning of the school year and at the end of the school year. The Haggery Olson-Wickman Schedules were administered only at the end of the school year.

Since twenty-nine instances of significant differences were identified, the hypotheses were clearly rejected. The findings of this study revealed that eighteen of the significant differences favored the normally progressing group and eight favored the retarded group.

Walker[1] made a study of the achievement, intelligence and personality of 30 problem and 30 non-problem children of the sixth and seventh grades in Orange Street Elementary School, Fayetteville, North Carolina.

Her findings indicated that the teacher may expect to find less intellectual adequacy, less emotional stability, greater scholastic retardation, and more advanced chronological age among these children who present the greatest number of behavior problems.

Thorpe[2] states that it has been demonstrated that there is a high relationship between good personality and success in life as there is between a degree of intelligence and later all around achievement.

Theories and Studies of Achievement.--The related literature which deals with the theories and studies concerning achievement will be

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1 Margaret Walker, "A Comparative Study of the Achievement, Intelligence and Personality Traits," Unpublished Master's Thesis, (Atlanta University, 1946).

2 Louis P. Thorpe, Personality and Life, (1941), pp. 3-6.

review in this section.

Betts[1] states:

> In the minds of most persons the word "achievement" means "extent of learning." Learning is produced, of course by continuous interaction between a person and the changing net work of circumstances surrounding his life. The extent of his learning at any particular moment is the results of his ability to learn and of the force of prior circumstances.
>
> Securing normal progress in all pupils, each according to his ability, is vastly superior to getting average progress in all pupils regardless of ability. Rapid progress is normal for superior pupils and slow progress is normal for the retarded pupil.

That children of high intelligence generally have high academic achievement has well been established. From the elementary school through univeristy signifioant disorepancies have been noted between intelligenoe and achievement among pupils of high intelligence.[2]

In an attempt to learn more about the disparities between intelligence and achievement, Cohler[3] made a study using pupils enrolled in 21 Chicago schools. In these schools all the children of grade 6B to 8B inclusive, who had achieved I. Q.s of 115 or higher on previous tests of intelligenoe were given the Otis Self-Administering Test of Mental Ability-Intermediate Examination. Each child whose I. Q. on the Otis test was less than 100 was then eliminated.

After the Otis and Achievement test were administered, the 375 pupils

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1 Gilbert L. Betts, "Suggestions for a Better Interpretation and Use of Standardized Achievement," Education, (December, 1950), pp. 217-221.

2 Milton J. Cohler, "Scholastic Status of Achievers and Non-Achievers of Superior Intelligence," Journal of Educational Psychology, (1941), pp. 603-610.

3 Ibid., pp. 603-610.

who took the test were divided according to their sigma differences into three groups. The 125 pupils in the middle group were called "intermediates" and were not studied further. The 127 pupils with the smallest sigma differences were called "achievers" and the 128 pupils with the largest sigma differences were called "non-achievers" of superior intelligence.[1]

These two groups were studied further by questionnaires, tests, ratings and history.

Findings of this study revealed that there was found some relationship between acceleration and the relative achievement and that there was a marked relationship between I. Q. and achievement of the achievers and non-achievers.[2]

One of the evidences of poor academic achievement is retardation in age-grade status. It is generally admitted that an etiological factor of retardation in age-grade status is inferior mental ability. St. John[3] on the basis of his data states:

> Perhaps the most striking evidence of the postive correlation between I. Q.'s and educational achievement is furnished by data on progress through the grades. Almost all pupils who repeat grades, and who are assigned to special classes, have low I. Q.'s. Relatively few pupils of average I. Q.'s, and none above average becomes retarded in grade during the period of record; and those who became

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1 Milton J. Cohler, "Scholastic Status of Achievers and Non-Achievers of Superior Intelligence," Journal of Educational Psychology, (1941).

2 Ibid.

3 Charles W. St. John, "Educational Achievement in Relation to Intelligence as Shown by Teachers Marks, Promotions and Scores in Standard Tests in Certain Elementary Schools," Harvard Studies in Education, (1939), p. 219.

accelerated by skipping grades, with few exceptions, have high I.Q.s.

The study just cited presents results of a type usually found in investigations involving correlations between intelligence quotients, or mental age, and academic achievement.

Another approach to the problem of the relationship of intelligence to academic achievement has been made by Merrill.[1] She, in a very interesting study, compared on the basis of achievement test scores the academic achievement of superior, normal, and retarded children of similar mental ages. Merrill's data shows that only insignificant differences are found between the achievement of retarded and normal children when mental age is held constant and that only at the mental age of eleven do retarded children excell superior children. She points out that at this level the retarded child has been in school ten times as long as the superior child and concludes, "The results of educational tests by which achievement have been measured indicates that mental age is a measure of a child's capacity to learn. The mental traits of the normal and the retarded child differ, but capacity for learning at the same mental level does not differ significantly."[2]

Studies into the achievement of repeaters indicates that children do no better than children of like ability who are promoted. This was suggested by Keyes[3] more than forty years ago when he reported that only

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[1]Maude A. Merrill, "On the Relation of Intelligence to Achievement in the Case of Mentally Retarded Children," Comparative Psychology Monograph, (1934), II, pp. 1-100.

[2]Ibid.

[3]Charles H. Keyes, "Progress Through the Grades of City Schools Teachers College, Contribution to Education, No. 42, (Columbia University, 1911).

twenty-one per cent of a large group of repeaters did better after repeating a grade than before and that 39 per cent actually did worse. Of course it is impossible to estimate how well the children might have done had they been promoted.

Arthur[1] sought to match a group of repeaters with a group of non-repeaters on the basis of mental age and discovered that the former learned no more than the latter over a period of two years. She put forward the thought, however, that failure to eliminate the causes of retention, rather than the repeating experience itself, may have been the more potent factor in determining subsequent achievement of the pupils.

The cause and effect relationship of a given factor can be clarified only by holding constant other factors likely to be influential. Klen and Branson[2] took cognizance of this fact when they equated children, all of whom were to have been retained in the grades, on the basis of chronological age, mental age, and sex. Half were then promoted and half were retained. They concluded that one a whole, potential repeaters profited more from promotion, so far as achievement was concerned.

William L. Conner[3] reports a study made by Baker in the public schools of Detroit. Baker collected and evaluated out of sound training in

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[1]Grace Arthur, "A Study of Achievement of Sixty Grade One Repeaters of the Same Age," Journal of Experimental Education, V (December, 1936), pp. 203-5.

[2]Vivian Klene and Ernest Branson, "Trial Promotion Versus Failure," Educational Research Bulletin, VII (Los Angles City Schools, 1929), pp. 6-11.

[3]William L. Conner, "Measuring Ability and Achievement," Review of Educational Research, (January, 1930), pp. 37-39.

Psychology and wide experience in public school work, the opinions of five hundred Detroit teachers as to the nature of the difference in capacity of the bright and dull children with respect to several subjects of the school curriculum. Baker reports from this findings that bright children not only handle ideas better but they are also superior in handling tools and materials.

Reported in the same study are findings by Wilson[1] gathered by testing of certain abilities of bright and dull children. He reports that bright children tend to handle ideas well, and to learn from reading and discussion, where dull children handle objects relatively better than bright children and learn mainly from manipulation of tools, materials and objects of interest bearing on the ideas to be learned.

Waddell[2] made a comparative study of Achievement, Intelligence and Personality traits of 25 failing and non-failing children of the fourth, fifth and sixth grades of the Brown Summit School, Summit, North Carolina. The Progressive Achievement Tests-Elementary Battery, Form A, California Test of Personality, Elementary Form A and the New California Short-Form Test of Mental Maturity were used as the measuring scales.

The Findings of this study revealed that non-failing pupils are significantly superior to failing pupils in Intelligence, and Personality

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1 William L. Conner, "Measuring Ability and Achievement," Review of Educational Research, (January, 1930), pp. 37-39.

2 Sarah Francis Waddell, "A Comparative Study of Failing and Non-Failing Pupils of Brown Summit Elementary School, 1949," Unpublished Master's Thesis, (Atlanta University).

as measured by the tests, and that non-failing pupils are markedly and significantly superior to failing pupils in all areas of achievement with the exception of meaning of opposites.

As reported by Bayer,[1] Cook made a study of 313 failing and non-failing students in St. Paul. A total of 32 comparisons of achievement tests means were made between the two groups. The final score was a tie. Sixteen differences were in favor of the passed group. From this findings Cook concludes that there appears to be no apparent difference in the achievement of these two groups.

Summary of Related Literature.--In summarizing the studies presented in this chapter, the writer found unique and interesting reactions of pupils as a result of intelligence, personality and achievement tests.

Through the body of evidence runs a consistent pattern: undesirable growth characteristics and unsatisfactory school progress are more closely associated with the educationally retarded pupils than with the normally progressing group. Conversely, slow learning children who have been promoted tend to make more satisfactory progress and adjustment do their peers who have been kept back.

Dickens found that children who rated low in intelligence tests were very slow in learning to read.

Hollingworth and Cobb in their study showed that equalization of educational opportunity did not equalize achievement and intelligence.

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1 Phillip A. Bayer, "Conditions that Make Guidance Possible," Review of Educational Research, XII, (February, 1942), pp. 29-31.

Eaton revealed in his study that the average students were above the average in ability and the group of English specials were inferior to the group of repeaters in all subjects. More than half of the group tested were below the average high school intelligence.

Farley found that non-failing pupils had a higher I. Q. than failing pupils.

Billingslea in his study showed that failing pupils were markedly inferior to non-failing pupils in achievement and that non-failing pupils were significantly superior to failing pupils in all areas of intelligence with the exception of four.

McElwee revealed that pupils who make normal progress in school seem to possess all of the desirable personality traits to a greater degree than do retarded children. The retarded children were markedly disinterested toward their school work.

Norris in her study of personality found that gifted children tend to be superior in character traits and interest as well as ability, and the more superior they are, the more likely they are to make high scores on tests of personality.

Lewis found that brilliant pupils were superior to normally progressing pupils rated higher than the retarded ones.

McGhee and Lewis revealed in their study that mentally retarded children are less well adjusted in personality reactions than mentally superior ones.

Afinson in his comparison of certain personality characteristics found that normally progressing and educationally retarded pupils did not differ appreciably in personality adjustment.

Gouch revealed in his study that socio-economic status has a positive relationship to academic achievement and personality inventory scores have a slight negative relationship to achievement.

Sandin disclosed that educationally retarded pupils tend to choose companions from grades higher than their own and that they showed a general indicative of a less happy adjustment than did the normally progressing group.

Goodland in his investigation found significant differences in social adjustment and personal adjustment between the normally progressing and educationally retarded groups.

Walker found that there is no significant differences between ascendence-submission and introversion of problem and non-problem children. The statistically reliable difference between emotional stability of the group indicates that the non-problem group has a greater emotional stability.

Thorpe states that there is a high relationship between good personality and success in life as there is between a degree of intelligence and achievement.

Cohler found some relationship between acceleration and relative achievement and a marked relationship between I. Q. and achievement of achievers and non-achievers.

St. John revealed in his study a positive correlation between I. Q. and educational achievement and that repeaters have lower I.Q.'s that non-repeaters.

Merrill found that children of normal I. Q. average slightly better in performance in educational tests than do retarded children.

Keyes in his study revealed that 20 per cent of a large group of repeaters did better after repeating grade than before and that 39 per cent actually did worse.

Arthur found that after matching a group of non-repeaters on the basis of mental ages that the former learned no more than the latter over a period of two years.

Klen and Branson concluded in their study that potential repeaters profited more from promotion, so far as achievement was concerned.

Conner reports that from a study by Bayer that bright children handle ideas better and are superior in handling tools.

Wilson reports in the same study that bright children tend to handle ideas well but dull children handle objects relatively better.

Waddell in her study revealed that non-failing pupils are significantly superior to failing pupils in intelligence and personality and personality and are markedly and significantly superior to failing pupils in all areas of achievement with the exception of meaning of opposites.

Cook found that there appears no differences in the achievement of failing and non-failing groups tested by him.

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

Organization and Treatment of Data.--The data for the purposes of this research as obtained through the administration of the three tests, namely: California Test of Mental Maturity (Elementary), 1950 Short-Form, the California Achievement Tests (Elementary), and the California Test of Personality will be presented in this chapter.

These three tests were administered to 24 normally progressing pupils twenty-two educationally retarded pupils, or a total of 46 seventh-graders of the Emery Street High School, Dalton, Georgia.

The data derived from the administration of the three tests are organized around a total of one hundred and eighteen basic Tables and seventeen basic Figures, and are presented as follows:

1. There are twenty-six Tables (26) and seven (7) Figures which will present the basic data on the "intelligence" level of the subjects of the seventh-grade. The seven (7) Tables will present the frequency distribution of the scores obtained by the group of normal and retarded pupils, separately, on each variable of the Intelligence Test, together with their respective measures of central tendency, variability, reliability, and "norms" or grade-placements. The thirteen (13) Frequency Pologons will present the graphic comparison of the obtained scores of the two groups for each variable of the test.

2. There are thirty (30) Tables and three (3) Figures which will present the basic data on the "personality" level of the subjects of the seventh-grade. The thirty (30) Tables will present the frequency distribution of the scores obtained by the normal and retarded pupils, separately, on each variable of the Personality Test, together with their respective measures of central tendency, variability, reliability, and "norms" or grade-placements, and percentile rank. The three (3) Frequency Pologons will present the graphic comparison of the obtained scores of the two groups for each variable of the test.

3. There are fifty-two (52) Tables and seven (7) Figures which will present the basic data on the "achievement" level of the subjects of the seventh-grade. The fifty-two (52) Tables will present the frequency distribution of the scores obtained by the normal and retarded pupils, separately, on each variable of the Achievement Test, together with their respective measures of central tendency, variability, reliability, and "norms" or grade-placements. The seven (7) Frequency Polygons will present the graphic comparison of the obtained scores of the two groups for each variable of the Test.

4. There are four (4) Tables which will present a summary of the basic indices of chronological and mental ages, intelligence quotients, and grade-placements of the forty-six (46) pupils; and two (2) Tables which will present the percentile norms obtained by the total group of forty-six (46) seventh-grade pupils studied.

5. There are two (2) Tables which will present the correlations found between the Total Intelligence Test Scores and the Total Achievement Test Scores; the Total Intelligence Test Scores and the Total Personality Test Scores; and the Total Personality Test Scores and the Total Achievement Test Scores for the normal and retarded groups, separately.

6. There are four (4) Tables which will present the Summary of Total Intelligence, Total Personality, Total Achievement and Total Correlations for the normal and retarded groups.

The data obtained from the administration of the three tests are dichotomized under the score-captions: Normally Progressing and Retarded pupils.

The criteria of the reliability of the statistics on the various paired variables of the data were: Fisher's "t" test of significant differences at 44 degrees of freedom and one per cent level of confidence, with a "t" value of 2.58;[1] and the significance the "r's"

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[1] Henry E. Garret, Statistic in Psychology and Education, (New York, 1947).

obtained was set at a "t" value of 2.69[1] at 44 degrees of freedom.

Necessarily, therefore, the criteria used for references as to meaningfulness or logical significance of computed statistics of the data for the two groups, normal and retarded, separately and jointly, in comparison with eadh other, were the established "norms" of grade-placements and percentile rank for the respective test results being analyzed and interpreted presently.

The performance of the two groups, normal and retarded, for the seventh-grade on the three test will be presented in turn, in the discussion to follow.

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY

Results on the California Test of Mental Maturity (Sensing Left and Right.--The data on "Sensing Left and Right" component of the California Test of Mental Maturity as revealed by the scores obtained by forty-six subjects comprising the two groups of the "normal" and "retarded" pupils of the Emery Street High School, Dalton, Georgia, as presented in Table 1, page 35, are found in the separate paragraphs to follow.

Normal Group.-- The data on Sensing Left and Right component for the twenty-four normally progressing pupils indicated a range from a low of 4 to a high of 17, with a mean score of 11.12, a median score of 11.5, a standard deviation of 3.48, and a standard error of the mean of 0.62.

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1 E. F. Linquist, A First Course in Statistic, (Boston, 1942), pp. 189-190.

TABLE 1

DISTRIBUTION OF THE RAW SCORES ON THE SENSING RIGHT AND LEFT COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
18 - 19	0	0.00	1	4.54	1	2.17
16 - 17	3	12.50	3	13.64	6	13.04
14 - 15	3	12.50	4	18.18	7	15.22
12 - 13	4	16.66	4	18.18	8	17.39
10 - 11	8	33.33	5	22.72	13	28.26
8 - 9	2	8.33	2	9.09	4	8.69
6 - 7	2	8.33	1	4.54	3	6.52
4 - 5	2	8.33	2	9.09	4	8.69
2 - 3	0	0.00	0	0.00	0	0.00
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.98	22	99.98	46	99.98
Mean		11.12		12.14		
Median		11.5		12.21		
Sigma		3.48		3.93		
$Sigma_m$		0.62		0.86		
G. P.		6.0		6.5		

Approximately 41.66 per cent of the normally progressing pupils scored above the mean, while 24.99 per cent of them scored below the mean, and 33.33 per cent of the normal group scored within the mean class-interval. The mean score of 11.12 indicated a grade-placement of 6.0, which is below the norm expectancy.

Retarded Group.-- The data on the Sensing Left and Right component for the 22 retarded pupils indicated a range from a low of 4 to a high of 19, with a mean score of 12.14, a median score of 12.21, a standard deviation of 3.93, and a standard error of the mean of 0.86. Approximately 36.36 per cent of the retarded pupils scored above the mean, while 45.44 per cent of them scored below the mean, and 18.18 per cent of the retarded group scored within the mean class-interval. The mean score of 12.14 indicated a grade placement of 6.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 2, page 37, for the normal pupils the mean was 11.12, for the retarded pupils 12.14, with a difference of 1.02 in favor of the retarded pupils. The median for the normal pupils was 11.5 and for the retarded pupils it was 12.21, with a difference of 0.71 in favor of the retarded pupils. The standard deviation for the normal pupils was 3.48 and for the retarded pupils it was 3.93, with a difference of .45, in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.62 and for the retarded pupils it was 0.86, with a difference of .24, in favor of the retarded pupils. The grade-placements were 6.0 and 6.5 for the normal and retarded groups, respectively, to show a difference of 0.5 in favor of the retarded pupils.

TABLE 2

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (SENSING LEFT AND RIGHT) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	11.12	3.48	.62			
and					1.06	1.02	.96
Retarded	22	12.14	3.93	.86			

The "t" value for the data on the two groups was 0.96. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence.[1] Therefore, the difference between the group of normally progressing pupils and the group of retarded pupils on the component of "Sensing Left and Right" was not statistically significant.

Results on the California Test of Mental Maturity (Manipulation Areas).-- The data on the "Manipulation Areas" component of the California Test of Mental Maturity as revealed by the scores obtained by the two groups, and as presented in Table 3, page 38, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Manipulation Areas component for the normally progressing pupils indicated a range from a low of 2 to a high

[1] The criterion of reliability set for these data was a "t" of 2.58 at the one per cent level of confidence at 44 degrees of freedom.

TABLE 3

DISTRIBUTION OF THE RAW SCORES ON THE MANIPULATION AREAS COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
10 - 11	0	0.00	0	0.00	0	0.00
8 - 9	3	12.50	0	0.00	3	6.52
6 - 7	4	16.66	5	22.72	9	19.56
4 - 5	8	33.33	8	36.36	16	34.78
2 - 3	9	37.50	5	22.72	14	30.43
0 - 1	0	0.00	4	18.18	4	8.69
Total	24	99.99	22	99.98	46	99.98
Mean		4.58		3.78		
Median		4.05		4.00		
Sigma		2.04		2.04		
$Sigma_m$		0.41		0.44		
G. P.		6.0		5.7		

of 9, with a mean score of 4.58, a median score of 4.05, a standard deviation of 2.04, and a standard error of the mean of 0.41. Approximately 29.16 per cent of the normally progressing pupils scorec above the mean, while 37.50 per cent of them scored below the mean, and 33.33 per cent of the normal group scored within the mean class-interval. The mean score of 4.58 indicated a grade-placement of 6.0, which is below the norm of expectancy.

Retarded Group.-- The data on the Manipulation Areas component for

the retarded pupils indicated a range from a low of 0 to a high of 7, with a mean score of 3.78, a median score of 4.00, a standard deviation of 2.04, and a standard error of the mean of 0.44. Approximately 22.72 per cent of the retarded pupils scored above the mean, while 40.90 per cent of them scored within the mean class-interval. The mean score of 3.78 indicated a grade placement of 5.7, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 4, page 40, for the normal pupils the mean was 4.58, for the retarded pupils 3.78, with a difference of 0.80 in favor of the normal pupils. The median for the normal pupils was 4.05 and for the retarded pupils it was 4.00, with a difference of 0.05 in favor of the normal pupils. The standard deviation for the normal pupils was 2.04 and for the retarded pupils it was 2.04, to show no difference. The standard error of the mean for the normal pupils 0.41 and for the retarded pupils it was 0.44, with a difference of .03 in favor of the retarded pupils. The grade-placements were 6.0 and 5.7 for the normal and retarded groups, respectively, to show a difference of 0.3 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 1.33. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group retarded pupils on the component of "Manipulation Areas" was not statistically significant.

Results on the California Test of Mental Maturity (Spatial Relationship).-- The data on "Spatial Relationship" component of the California

TABLE 4

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (MANIPULATION AREAS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	4.58	2.04	.41			
and					.60	.80	1.33
Retarded	22	3.78	2.04	.44			

Test of Mental Maturity as revealed by the scores obtained by the two groups of pupils, as presented in Table 5, page 41, and Figure 1, page 42, are found in separate paragraphs to follow.

Normal Group.-- The data on the Spatial Relationship component for the normally progressing pupils indicated a range from a low of 6 to a high of 32, with a mean score of 17.75, a median score of 17.0, a standard deviation of 6.15, and a standard error of the mean of 1.28. Approximately 33.33 per cent of the normally progressing pupils scored above the mean, while 54.16 per cent of them scored below the mean, and 12.50 per cent of the normal group scored within the mean class-interval. The mean score of 17.75 indicated a grade placement of 6.0, which is below the norm of expectancy.

Retarded Group.-- The data on the Spatial Relationship component for the retarded pupils indicated a range from a low of 6 to a high of 26, with a mean score of 16.95, a median score of 16.37, a standard deviation

TABLE 5

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL SPATIAL RELATIONSHIP COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
30 - 32	1	4.17	0	0.00	1	2.17
27 - 29	1	4.17	0	0.00	1	2.17
24 - 26	4	16.66	3	13.64	7	15.22
21 - 23	2	8.33	2	9.09	4	8.69
18 - 20	3	12.50	3	13.64	6	13.04
15 - 17	6	25.00	8	36.36	14	30.43
12 - 14	4	16.66	4	18.18	8	17.39
9 - 11	2	8.33	1	4.54	3	6.52
6 - 8	1	4.17	1	4.54	2	4.34
Total	24	99.99	22	99.99	46	99.96
Mean		17.75		16.95		
Median		17.0		16.37		
Sigma		6.15		4.62		
$Sigma_m$		1.28		1.01		
G. P.		6.0		5.9		

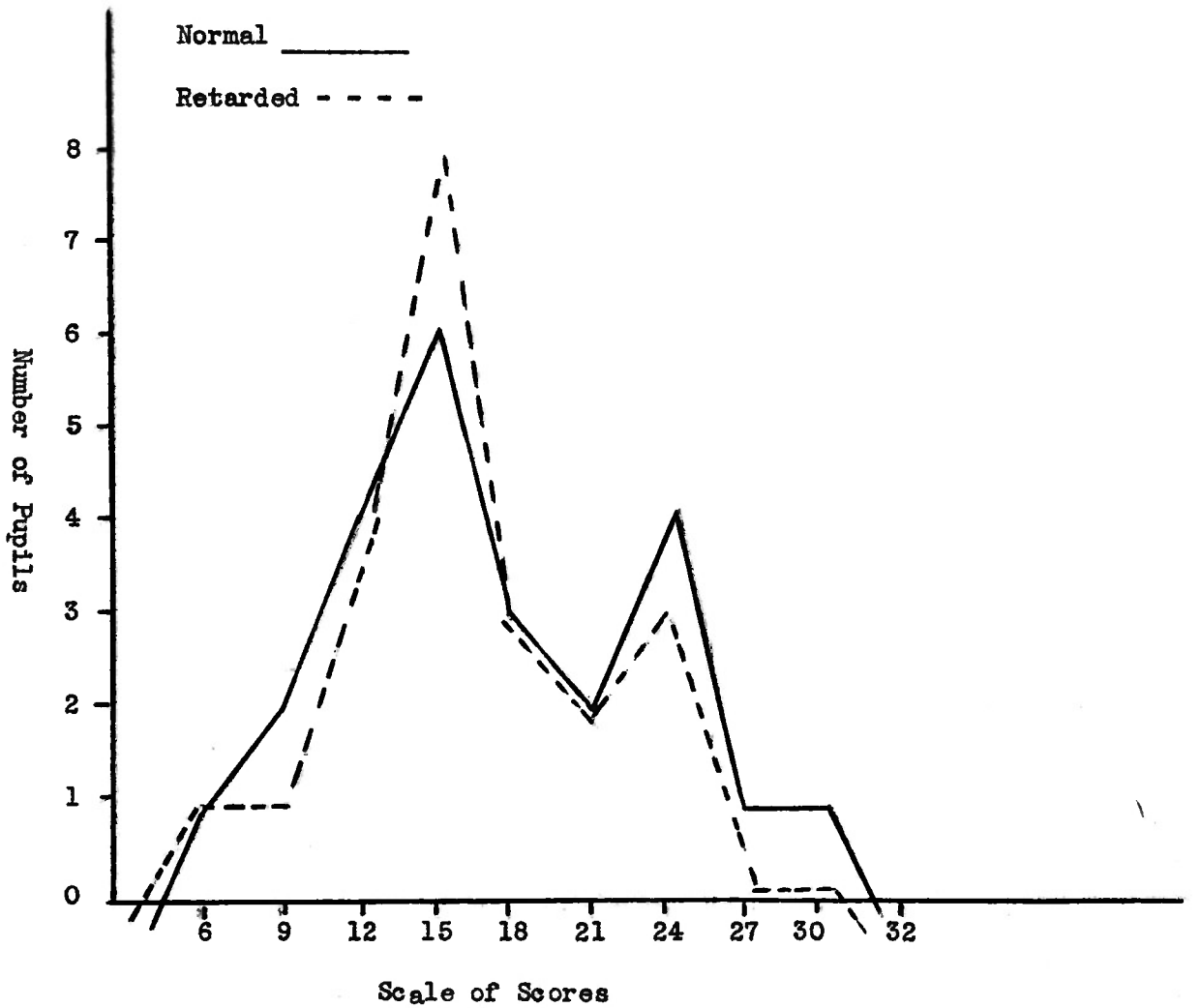

Fig. 1.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Spatial Relationship) California Test of Mental Maturity.

TABLE 6

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (TOTAL SPATIAL RELATIONSHIP) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	17.75	6.15	1.28			
and					1.63	0.80	0.49
Retarded	22	16.95	4.62	1.01			

of 4.62, and a standard error of the mean of 1.01. Approximately 36.37 per cent of the retarded pupils scored above the mean, while 27.26 per cent of them scored below the mean, and 36.36 per cent of the retarded pupils scored within the mean class-interval. The mean score of 16.95 indicated a grade-placement of 5.9, which is below the norm of expectancy.

Comparative Data and "t" Ratio.--As indicated in Table 6, page 43, for the normal pupils the mean was 17.75, for the retarded pupils 16.95, with a difference of 0.80 in favor of the normal pupils. The median for the normal pupils was 17.00 and for the retarded pupils it was 16.37, with a difference of 0.63 in favor of the normal pupils. The standard deviation for the normal pupils was 6.15 and for the retarded pupils it was 4.62, with a difference of 1.93 in favor of the normal pupils. The standard error of the mean for the normal pupils was 1.28 and for the retarded pupils it was 1.01, with a difference of .27 in favor of the normal pupils. The grade-placements were 6.0 and 5.9 for the normal and retarded groups, respectively, to show a difference

of 0.1 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 0.49. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Spatial Relationship" was not statistically significant.

Results on the California Test of Mental Maturity (Similarities).-- The data on "Similarities" component of the California Test of Mental Maturity as revealed by the scores obtained by the two groups of pupils, as presented in Table 7, page 45, are found in separate paragraphs to follow.

Normal Group.-- The data on Similarities component for the normally progressing pupils indicated a range from a low of 2 to a high of 7, with a mean score of 4.91, a median score of 4.04, a standard deviation of 1.42, and a standard error of the mean of 0.29. Approximately 16.66 per cent of the normally progressing pupils scored above the mean, while 37.50 per cent of them scored below the mean, and 45.83 per cent of the normal group scored within the mean class-interval. The mean score of 4.91 indicated a grade-placement of 5.0, which is below the norm of expectancy.

Retarded Group.-- The data on Similarities component for the retarded pupils indicated a range from a low of 0 to a high of 9, with a mean score of 4.14, a median score of 3.97, a standard deviation of 2.02, and a standard error of the mean of 0.44. Approximately 18.18 per cent of the retarded pupils scored above the mean, while 40.90 per cent of them

TABLE 7

DISTRIBUTION OF THE RAW SCORES ON THE SIMILARITIES COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	0	0.00	0	0.00	0	0.00
10 - 11	0	0.00	0	0.00	0	0.00
8 - 9	0	0.00	2	9.09	2	4.34
6 - 7	4	16.66	2	9.09	6	13.04
4 - 5	11	45.83	9	40.91	20	43.47
2 - 3	9	37.50	8	36.36	17	36.36
0 - 1	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.99	46	99.98
Mean		4.91		4.14		
Median		4.04		3.97		
Sigma		1.42		2.02		
$Sigma_m$		0.29		0.44		
G. P.		5.0		4.9		

scored below the mean, and 40.91 per cent of the retarded group scored within the mean class-interval. The mean score of 4.14 indicated a grade-placement of 4.9, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 8, page 46, for the normal pupils the mean was 4.91, for the retarded pupils it was 4.14, with a difference of 0.77 in favor of the normal pupils. The median

TABLE 8

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (SIMILARITIES) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	4.91	1.42	0.29			
and					0.52	0.77	1.48
Retarded	22	4.14	2.02	0.44			

for the normal pupils was 4.04, and for the retarded pupils it was 3.97, with a difference of 0.07 in favor of the normal pupils. The standard deviation for the normal pupils was 1.42 and for the retarded pupils it was 2.02, with a difference of .60 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.29 and for the retarded pupils it was 0.44, with a difference of .15 in favor of the retarded pupils. The grade-placements were 5.0 and 4.9 for the normal and retarded groups, respectively, to show a difference of 0.1 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 1.48. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Similarities" was not statistically signfficant.

TABLE 9

DISTRIBUTION OF THE RAW SCORES ON THE INFERENCES COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	0	0.00	0	0.00	0	0.00
10 - 11	2	8.33	1	4.54	3	6.52
8 - 9	2	8.33	0	0.00	2	4.34
6 - 7	10	41.66	4	18.18	14	30.43
4 - 5	6	25.00	10	45.45	16	34.78
2 - 3	4	16.66	5	22.72	9	19.56
0 - 1	0	0.00	2	9.09	2	4.34
Total	24	99.98	22	99.98	46	99.97
Mean		5.83		4.32		
Median		5.9		4.3		
Sigma		2.22		2.16		
$Sigma_m$		0.46		0.45		
G. P.		4.5		4.00		

Results on the California Test of Mental Maturity (Inferences).-- The data on the "Inferences" component of the California Test Mental Maturity as revealed by the scores obtained by the two groups of pupils, as presented in Table 9, page 47, are found in separate paragraphs to follow.

Normal Group.-- The data on Inferences component for the normally progressing pupils indicated a range from a low of 2 to a high of 11, with a mean score of 5.83, a median score of 5.9, a standard deviation

of 2.22, and a standard error of the mean of 0.46. Approximately 16.66 per cent of the normally progressing pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 41.66 per cent of the normal group scored within the mean class-interval. The mean score of 5.83 indicated a grade-placement of 4.5, which is below the norm of expectancy.

Retarded Group.-- The data on the Inferences component for the retarded pupils indicated a range from a low of 0 to a high of 11, with a mean score of 4.32, a median score of 4.3, a standard deviation of 2.16, and a standard error of the mean of 0.45. Approximately 22.72 per cent of the retarded pupils scored above the mean, while 31.81 per cent of them scored below the mean, and 45.45 per cent of the retarded group scored within the mean class-interval. The mean score of 4.32 indicated a grade-placement of 4.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 10, page 49, for the normal pupils the mean was 5.83, for the retarded pupils 4.32, with a difference of 1.51 in favor of the normal pupils. The median for the normal pupils was 5.9 and for the retarded pupils 4.3, with a difference of 1.6 in favor of the normal pupils. The standard deviation for the normal pupils was 2.22 and for the retarded pupils it was 2.16, with a difference of .06 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.46 and for the retarded pupils it was 0.45, with a difference of .01 in favor of the normal pupils. The grade-placements were 4.5 and 4.0 for the normal and retarded groups, respectively, to show a difference of 0.8 in favor of the normally progressing pupils.

TABLE 10

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (INFERENCES) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	5.83	2.22	0.46			
and					0.64	1.51	2.35
Retarded	22	4.32	2.16	0.45			

The "t" value for the data on the two groups was 2.35. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the groups of normally progressing pupils and the group of educationally retarded pupils on the component of "Inferences" was not statistically significant.

Results on the California Test of Mental Maturity (Total Logical Reasoning).-- The data on the "Total Logical Reasoning" component of the California Test of Mental Maturity as revealed by the scores obtained by the two groups, as presented in Table 11, page 50, and Figure 2, page 51, are found in separate paragraphs to follow.

Normal Group.-- The data on Total Logical Reasoning component for the normally progressing pupils indicated a range from a low of 6 to a high of 17, with a mean score of 9.75, a median score of 9.6, a standard deviation of 2.61, and a standard error of the mean of 0.54. Approximately 29.17 per cent of the normally progressing pupils scored above the

TABLE 11

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL LOGICAL REASONING COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
16 - 17	1	4.17	1	4.54	2	4.34
14 - 15	1	4.17	0	0.00	1	2.17
12 - 13	5	20.83	1	4.54	6	13.04
10 - 11	5	20.83	4	18.18	9	19.56
8 - 9	7	29.16	5	22.72	12	26.09
6 - 7	5	20.83	8	36.36	13	28.26
4 - 5	0	0.00	1	4.54	1	2.17
2 - 3	0	0.00	2	9.09	2	4.34
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.97	46	99.97
Mean		9.75		8.05		
Median		9.6		7.5		
Sigma		2.61		3.03		
$Sigma_m$		0.54		0.66		
G. P.		4.9		4.1		

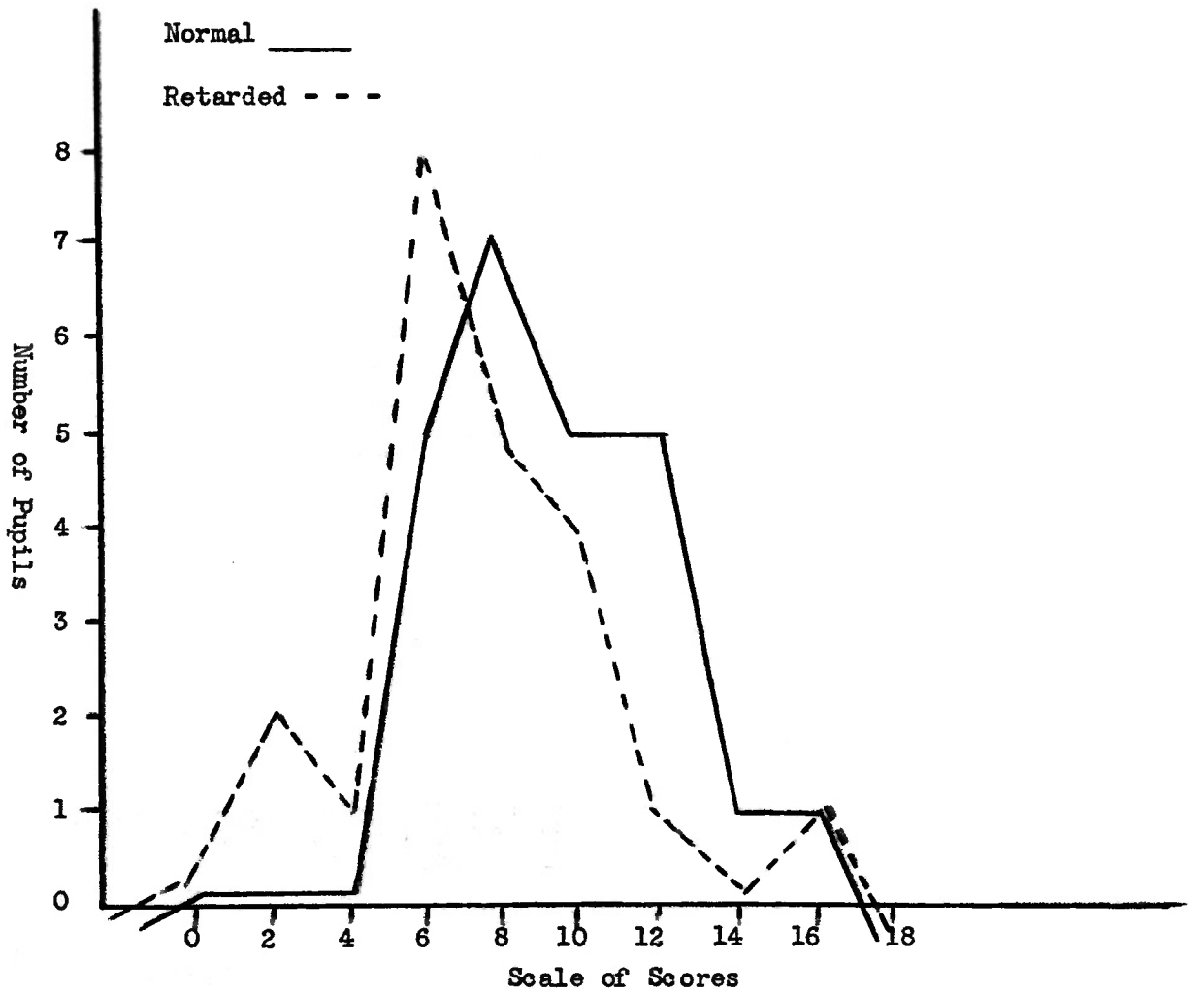

Fig. 2.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Logical Reasoning) California Test of Mental Maturity.

mean, while 49.99 per cent of them scored below the mean, and 20.83 per cent of the normal group scored within the mean class-interval. The mean score of 9.75 indicated a grade-placement of 4.9, which is below the norm of expectancy.

Retarded Group.-- The data on Total Logical Reasoning for the retarded pupils indicated a range from a low of 2 to a high of 17, with a mean score of 8.05, a median score of 7.5, a standard deviation of 3.03, and a standard error of the mean of 0.66. Approximately 27.26 per cent scored above the mean, while 49.99 per cent scored below the mean, and 22.72 per cent scored within the mean class-interval. The mean score of 8.05 indicated a grade-placement of 4.1 which is below the norm of expectancy.

Comparative Data and "t" Ratio .-- As indicated in Table 12, page 53, for the normal pupils the mean was 9.75, for the retarded pupils 8.05, with a difference of 1.70 in favor of the normal group. The median for the normal pupils was 9.6 and for the retarded pupils it was 7.5, with a difference of 2.1 in favor of the normal pupils. The standard deviation for the normal pupils was 2.61, with a difference of .42, and for the retarded pupils it was 3.03 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.54 and for the retarded pupils it was 0.66, with a difference of .12 in favor of the retarded pupils. The grade-placements were 4.9 and 4.1 for the normal and retarded groups, respectively, to show a difference of o.8 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 2.0. This "t" was not significant as it eas less than 2.58 at the one per cent level of

TABLE 12

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (TOTAL LOGICAL REASONING) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	9.75	2.61	0.54			
and					0.85	1.70	2.0
Retarded	22	8.05	3.03	0.66			

confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Logical Reasoning" was not statistically significant.

Results on the California Test of Mental Maturity (Number Series).-- The data on the "Number Series" component of the California Test of Mental Maturity as revealed by the scores obtained by the two groups, as presented in Table 13, page 54, are found in separate paragraphs to follow.

Normal Group.-- The data on Number Series component for the normally progressing pupils indicated a range from a low of 2 to a high of 9, with a mean score of 3.54, a median score of 3.00, a standard deviation of 2.12, and a standard error of the mean of 0.44. Approximately 16.66 per cent of the normally progressing pupils scored above the mean, while 66.67 per cent of them scored below the mean, and 16.66 per cent of the normal group scored within the mean class-interval. The mean score of 3.54 indicated a grade-placement of 7.8, which is at the norm of

TABLE 13

DISTRIBUTION OF THE RAW SCORES ON THE NUMBER SERIES COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	0	0.00	0	0.00	0	0.00
10 - 11	0	0.00	0	0.00	0	0.00
8 - 9	1	4.16	0	0.00	1	2.17
6 - 7	3	12.50	0	0.00	3	6.52
4 - 5	4	16.66	4	18.18	8	17.39
2 - 3	16	66.67	13	59.09	29	63.04
0 - 1	0	0.00	5	22.72	5	10.87
Total	24	99.99	22	99.99	46	99.99
Mean		3.54		2.41		
Median		3.00		2.34		
Sigma		2.12		0.63		
$Sigma_m$		0.44		0.14		
G. P.		7.8		6.9		

expectancy.

Retarded Group.-- The data on the Number Series component for retarded pupils indicated a range from a low of 0 to a high of 5, with a mean score of 2.41, a median score of 2.34, a standard deviation of 0.63, and a standard error of the mean of 0.14. Approximately 18.18 per cent of the retarded pupils scored above the mean, while 22.72 per cent of them scored below the mean, and 59.09 per cent of the retarded pupils

TABLE 14

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (NUMBER SERIES) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	3.54	2.12	0.44			
and					0.46	1.13	2.45
Retarded	22	2.41	0.63	0.14			

scored within the mean class-interval. The mean score of 2.41 indicated a grade-placement of 6.9, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 14, page 55, for the normal pupils the mean was 3.54, for the retarded pupils 2.41, with a difference of 1.13 in favor of the normal group. The median for the normal pupils was 3.00 and for the retarded pupils was 2.34, with a difference of 0.66 in favor of the normal pupils. The standard deviation for the normal pupils was 2.12 and for the retarded pupils it was 0.63, with a difference of 1.49 in favor of the normal group. The standard error of the mean for the normal group was 0.44 and for the retarded pupils it was 0.14, with a difference of .30 in favor of the normal pupils. The grade-placements were 7.8 and 6.9 for the normal and retarded groups, respectively, to show a difference of 0.9 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 2.45. This "t" was

not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Number Series" was not statistically significant.

Results of the California Test of Mental Maturity (Numerical Quality).--The data on the "Numerical Quality" component of the California Test of Mental Maturity as revealed by the scores obtained by the two groups, as presented in Table 15, page 57, are found in separate paragraphs to follow.

Normal Group.-- The data on Numerical Quality component for the normally progressing pupils indicated a range from a low of 0 to a high of 9, with a mean score of 3.5, a median score of 3.3, a standard deviation of 2.14, and a standard error of the mean of 0.45. Approximately 12.50 per cent of the normally progressing pupils scored above the mean, while 54.16 per cent of them scored below the mean, and 33.33 per cent of the normal group scored within the mean class-interval. The mean score of 3.3 indicated a grade-placement of 6.5, which is below the norm of expectancy.

Retarded Group.-- The data on Numerical Quality component for the retarded pupils indicated a range from a low of 0 to a high of 11, with a mean score of 3.31, a median score of 2.9, a standard deviation of 2.38 and a standard error of the mean of 0.51. Approximately 36.35 per cent of the retarded pupils scored above the mean, while 18.18 per cent of them scored below the mean, and 45.45 per cent of the retarded group scored within the mean class-interval. The mean score of 3.31 indicated

TABLE 15

DISTRIBUTION OF THE RAW SCORES ON THE NUMERICAL QUALITY COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	0	0.00	0	0.00	0	0.00
11 - 10	0	0.00	1	4.54	1	2.17
8 - 9	1	4.17	1	4.54	2	4.34
6 - 7	2	8.33	0	0.00	2	4.34
4 - 5	8	33.33	6	27.27	14	30.43
2 - 3	10	41.66	10	45.45	20	43.47
0 - 1	3	12.50	4	18.18	7	15.22
Total	24	99.99	22	99.99	46	99.99
Mean		3.5		3.31		
Median		3.3		2.9		
Sigma		2.14		2.38		
$Sigma_m$		0.45		0.51		
G. P.		6.5		6.4		

a grade-placement of 6.4, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 16, page 58, for the normal pupils the mean was 3.5, for the retarded pupils 3.31, with a difference of 0.19 in favor of the normal pupils. The median for the normal pupils was 3.3 and for the retarded pupils it was 2.9, with a difference of 0.4 in favor of the normal pupils. The standard deviation

TABLE 16

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (NUMERICAL QUALITY) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	3.5	2.14	0.45			
and					0.68	0.19	0.28
Retarded	22	3.31	2.38	0.51			

for the normal pupils was 2.14 and for the retarded pupils it was 2.38, with a difference of 0.24 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.45 and for the retarded pupils it was 0.51, with a difference of .06 in favor of the retarded pupils. The grade-placements 6.5 and 6.4 for the normal and retarded grpups, respectively, to show a difference of 0.1 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 0.28. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the groups of normally progressing pupils and the group of retarded pupils on the component of "Numerical Quality" was not statistically significant.

Results on the California Test of Mental Maturity (Total Numerical Reasoning.--The data on the "Total Numerical Reasoning" component of the California Test of Mental Maturity as revealed by the scores obtained by

TABLE 17

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL NUMERICAL REASONING COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	1	4.17	1	4.54	2	4.34
10 - 11	2	8.33	1	4.54	3	6.52
8 - 9	5	20.83	1	4.54	6	13.04
6 - 7	10	41.66	9	40.91	19	41.30
4 - 5	3	12.50	7	31.82	10	21.73
2 - 3	3	12.50	2	9.09	5	10.87
0 - 1	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.98	46	99.97
Mean		6.75		5.96		
Median		6.7		5.72		
Sigma		2.48		2.4		
Sigma $G. P._{m}$		0.52		0.52		
		6.5		6.0		

the two groups, as presented in Table 17, page 59, and Figure 3, page 60, are found in separate paragraphs to follow.

Normal Group.-- The data on the Total Numerical Reasoning component for the normally progressing pupils indicated a range from a low of 2 to a high of 13, with a mean score of 6.75, a median score of 6.7, a standard deviation of 2.48, and a standard error of the mean of 0.52. Approximately 33.33 per cent of the normally progressing pupils scored

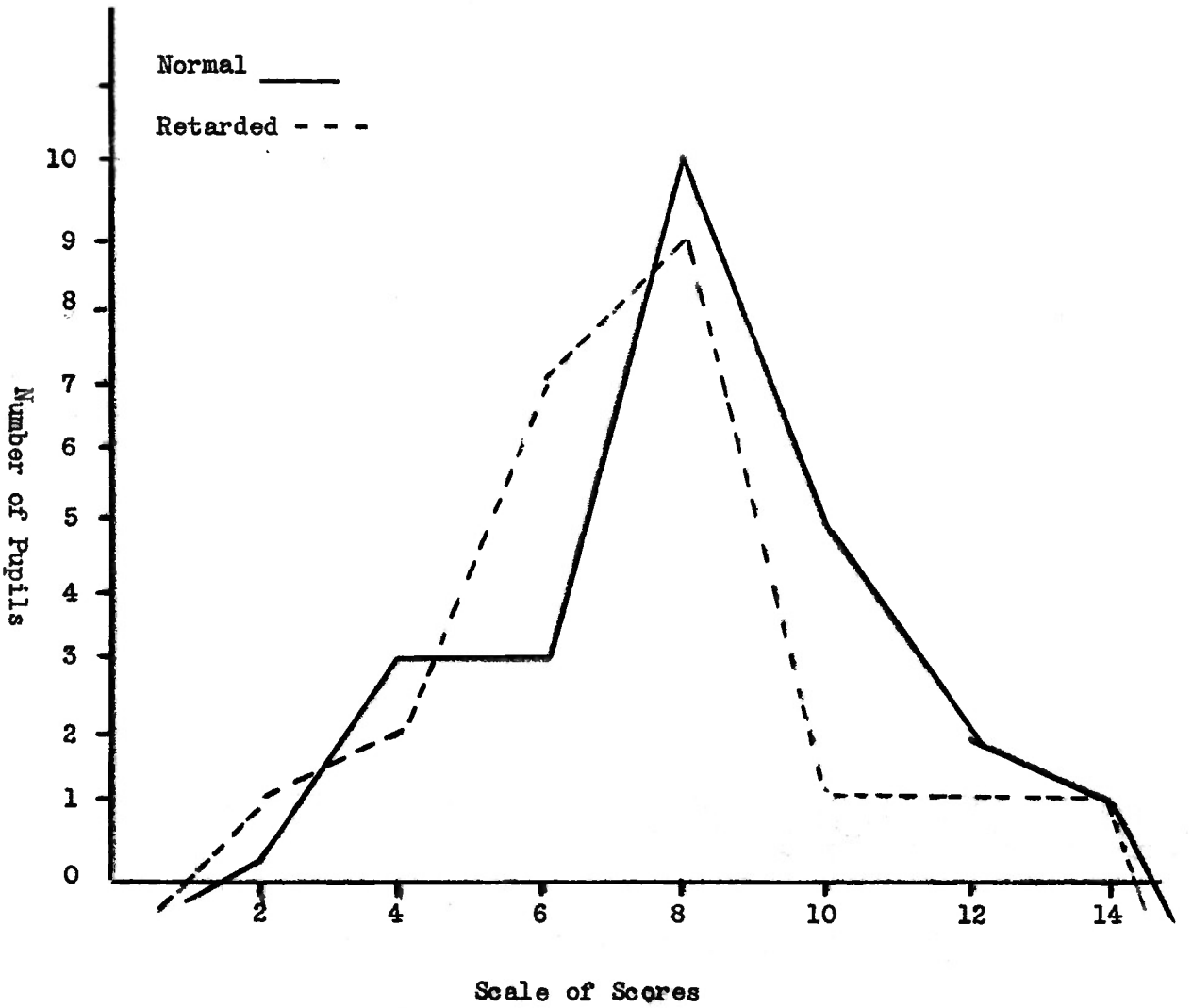

Fig. 3.- Frequency polygon of scores made by twenty-four normal and twenty-two retarded pupils (Total Numerical Reasoning) California Test of Mental Maturity.

above the mean, while 25.00 per cent of them scored below the mean, and 41.66 per cent of the normal group scored within the mean class-interval. The mean score of 6.75 indicated a grade-placement of 6.5, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Numerical Reasoning component for the retarded pupils indicated a range from a low of 0 to a high of 13, with a mean score of 5.96, a median score of 5.72, a standard deviation of 2.4, and a standard error of the mean of 0.52. Approximately 13.62 per cent of the retarded pupils scored above the mean, while 45.45 per cent of them scored below the mean, and 40.91 per cent of the retarded group scored within the mean class-interval. The mean score of 5.96 indicated a grade-placement of 6.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 18, page 62, for the normal pupils the mean was 6.75, for the retarded pupils 5.96, with a difference of 0.79 in favor of the normal pupils. The median for the normal pupils was 6.7 and for the retarded pupils it was 5.72, with a difference of 0.98 in favor of the normal pupils. The standard deviation for the normal pupils was 2.48 and for the retarded pupils it was 2.4, with a difference of .08 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.52, and for the retarded pupils it was 0.52, to show no difference. The grade-placements were 6.5 and 6.0 for the normal and retarded groups, respectively, to show a difference of 0.5 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 1.08. This "t" was not significant as it was less than 2.58 at the one per cent level of

TABLE 18

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (TOTAL NUMERICAL REASONING) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	6.75	2.48	0.52			
and					0.73	0.79	1.08
Retarded	22	5.96	2.4	0.52			

confidence. Therefore, the difference between the group of normally progressing pupils and the educationally retarded pupils on the component of "Total Numerical Reasoning" was not statistically significant.

Results on the California Test of Mental Maturity (Total Verbal Concept).--The data on the "Total Verbal Concept" component of the California Test of Mental Maturity as revealed by the two groups, as presented in Table 19, page 63, and Figure 4, page 64, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Verbal Concept for the normal pupils indicated a range from a low of 0 to a high of 26, with a mean score of 13.5, a median score of 11.83, a standard deviation of 5.28, and a standard error of the mean of 1.10. Approximately 37.50 per cent of the normally progressing pupils scored above the mean, while 45.84 per cent of them scored below the mean, and 16.66 per cent of the

TABLE 19

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL VERBAL CONCEPT COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
24 - 26	1	4.17	0	0.00	1	2.17
21 - 23	2	8.33	0	0.00	2	4.34
18 - 20	3	12.50	2	9.09	5	10.87
15 - 17	3	12.50	2	9.09	5	10.87
12 - 14	4	16.66	2	9.09	6	13.04
9 - 11	9	37.50	9	40.91	18	39.13
6 - 8	1	4.17	5	22.72	6	13.04
3 - 5	0	0.00	2	9.09	2	4.34
0 - 2	1	4.17	0	0.00	1	2.17
Total	24	99.98	22	99.99	46	99.97
Mean		13.5		10.41		
Median		11.83		9.83		
Sigma		5.28		4.08		
$Sigma_m$		1.10		0.84		
G. P.		6.1		5.8		

normal group scored within the mean class-interval. The mean score of 13.5 indicated a grade-placement of 6.1, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Verbal Concept for the retarded pupils indicated a range of a low of 3 to a high of 20, with a

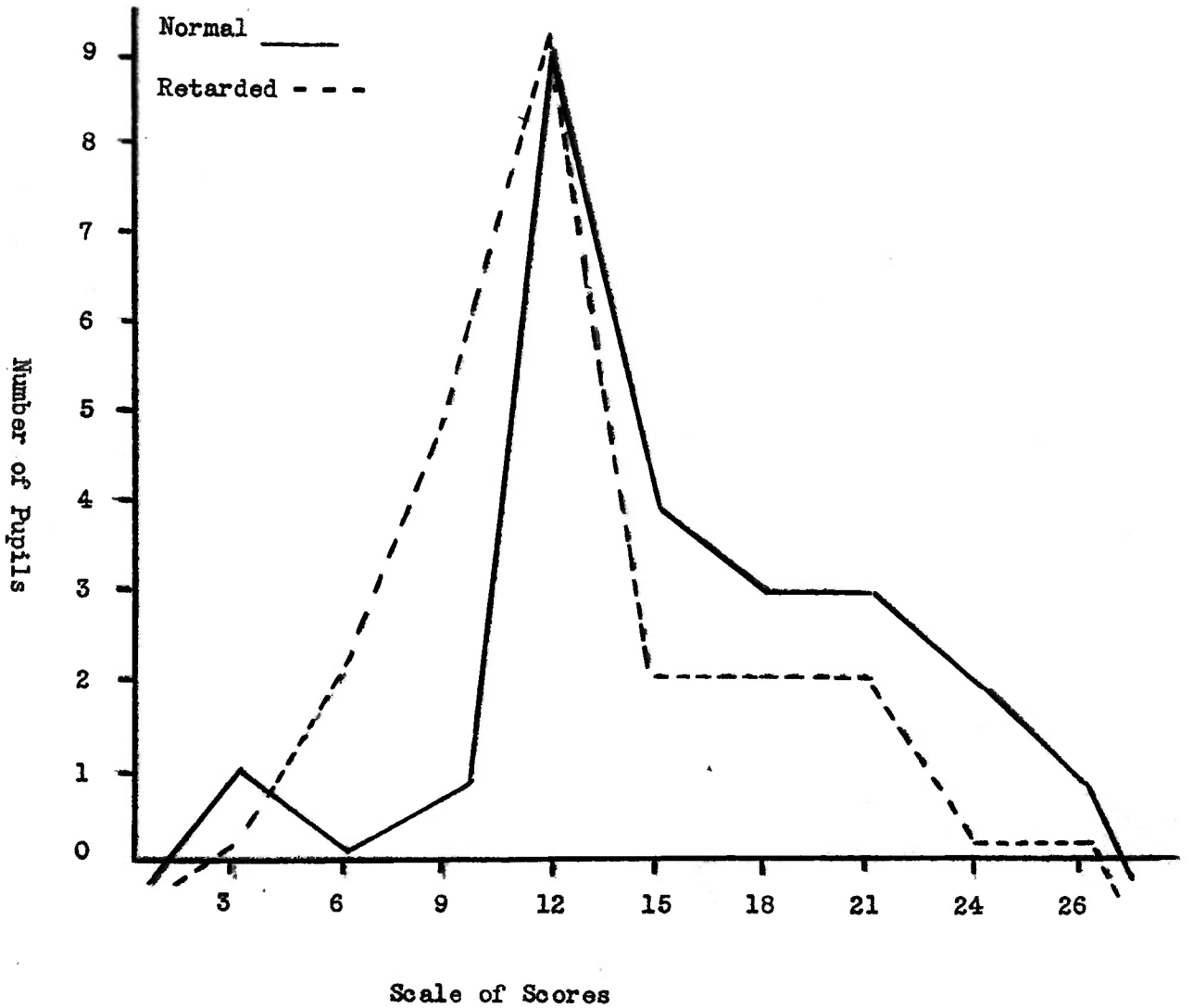

Fig. 4.- Frequency polygon of scores made by twenty-four normal and twenty-two retarded pupils on (Total Verbal Concept) California Test of Mental Maturity.

TABLE 20

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (TOTAL VERBAL CONCEPT) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	13.5	5.28	1.10			
and					1.38	3.09	2.02
Retarded	22	10.41	4.08	0.84			

mean score of 10.41, a median score of 9.83, a standard deviation of 4.08, and a standard error of the mean of 0.84. Approximately 27.27 per cent of the retarded pupils scored above the mean, while 31.91 per cent of them scored below the mean, and 40.81 per cent of the retarded group scored within the mean class-interval. The mean score of 10.41 indicated a grade-placement of 5.8, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 20, page 65, for the normal pupils the mean was 13.5, for the retarded pupils 10.41, with a difference of 3.09 in favor of the normal pupils. The median for the normal pupils was 11.83 and for the retarded pupils it was 9.83, with a difference of 2.0 in favor of the normal pupils. The standard deviation for the normal pupils was 5.28 and for the retarded pupils it was 4.08, with a difference of 1.2 in favor of the normal pupils. The standard error of the mean for the normal pupils was 1.10 and for the retarded pupils it was 0.84, with a difference of 0.26 in favor of the

normal pupils. The grade-placements were 6.1 and 5.8 for the normal and retarded groups, respectively, to show a difference of 0.3 in favor of the normally progressing group.

The "t" value for data on the two groups was 2.02. This "t" was not significant as it was less then 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Verbal Concept" was not statistically significant.

Results on the California Test of Mental Maturity (Total Mental Factors.-- The data on the "Total Mental Factors" component of the California Test of Mental Maturity as revealed by the scores obtained by the two groups of pupils, as presented in Table 21, page 67, and Figure five, page 68, are found in separate paragraphs to follow.

Normal Group.-- The data on the Total Mental Factors component for the normally progressing pupils indicated a range from a low of 25 to a high of 74, with a mean score of 47.42, a median score of 46.5, a standard deviation of 12.55, and a standard error of the mean of 2.62. Approximately 37.49 per cent of the normally progressing pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 20.83 per cent of the normal group scored within the mean class-interval. The mean score of 47.42 indicated a grade-placement of 6.1, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Mental Factors component for the retarded pupils indicated a range from a low of 20 to a high of 74, with a mean score of 40.9, a median score of 40.8, a standard deviation of 10.6, and a standard error of the mean of 2.31. Approximately 27.27

TABLE 21

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL MENTAL FACTORS COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
70 - 74	1	4.17	1	4.54	2	4.34
65 - 69	0	0.00	0	0.00	0	0.00
60 - 64	4	16.66	0	0.00	4	8.69
55 - 59	2	8.33	0	0.00	2	4.34
50 - 54	2	8.33	3	13.64	5	10.87
45 - 49	5	20.83	2	9.09	7	15.22
40 - 44	4	16.66	7	31.82	11	23.91
35 - 39	3	12.50	2	9.09	5	10.87
30 - 34	1	4.17	5	22.72	6	13.04
25 - 29	2	8.33	1	4.54	3	6.52
20 - 24	0	0.00	1	4.54	1	2.17
Total	24	99.98	22	99.98	46	99.97
Mean		47.42		40.9		
Median		46.5		40.8		
Sigma		12.55		10.6		
$Sigma_m$		2.62		2.31		
G. P.		6.6		5.3		

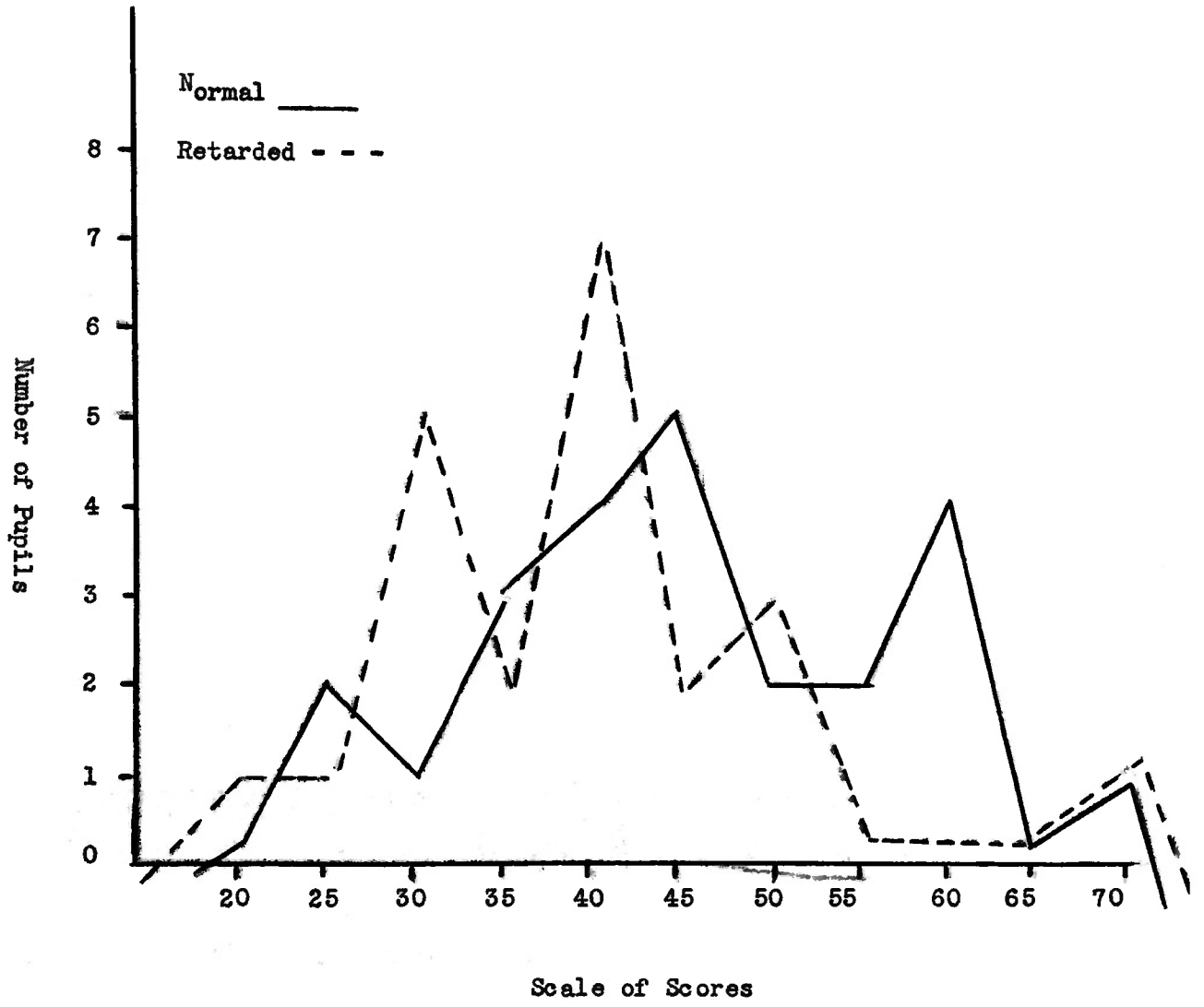

Fig. 5.- Frequency polygon of scores made by twenty-four normal and twenty-two retarded pupils on (Total Mental Factors) California Test of Mental Maturity.

TABLE 22

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (TOTAL MENTAL FACTORS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	47.42	12.55	2.62			
and					3.49	6.52	1.80
Retarded	22	40.9	10.6	2.31			

per cent of the retarded pupils scored above the mean, while 40.89 per cent of them scored below the mean, and 31.82 per cent of the retarded group scored within the mean class-interval. The mean score of 40.9 indicated a grade-placement of 5.4, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 22, page 69, for the normal pupils the mean was 47.42, for the retarded pupils 40.9, with a difference of 6.52 in favor of the normal pupils. The median for the normal pupils was 46.5 and for the retarded pupils it was 40.8, with a difference of 5.7 in favor of the normal pupils. The standard deviation for the normal pupils was 12.55 and for the retarded pupils it was 10.6 in favor of the normal group. The standard error of the mean for the normal pupils was 2.62 and for the retarded pupils it was 2.31 in favor of the normal pupils. The grade-placements were 6.6 and 5.3 for the normal and retarded groups, respectively, to show a difference of 1.3 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 1.80. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Mental Factors" was not statistically significant.

Results on the California Test of Mental Maturity (Total Language Factors.--The data on the "Total Language Factors" component of the California Test of Mental Maturity as revealed by the scored obtained by the two groups of pupils as presented in Table 23, page 71, and Figure 6, page 72, are found in separate paragraphs to follow.

Normal Group.-- The data on the Total Language Factors component for the normally progressing pupils indicated a range from a low of 6 to a high of 41, with a mean score of 22.75, a median score of 21.0, a standard deviation of 7.41, and a standard error of the mean of 1.54. Approximately 37.50 per cent of the normally progressing pupils scored above the mean, while 45.83 per cent of them scored below the mean, and 16.66 per cent of the normal group scored within the mean class-interval. The mean score of 22.75 indicated a grade-placement of 5.8, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Language Factors for the retarded pupils indicated a range from a low of 9 to a high of 35, with a mean score of 17.5, a median score of 15.25, a standard deviation of 7.59, and a standard error of the mean of 1.65. Approximately 36.36 per cent of the retarded pupils scored above the mean, while 40.90 per cent of them scored below the mean, and 22.72 per cent of the retarded pupils scored within the mean class-interval. The mean score of 17.5 indicated

TABLE 23

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL LANGUAGE FACTORS COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
39 - 41	1	4.17	0	0.00	1	2.17
36 - 38	1	4.17	0	0.00	1	2.17
33 - 35	2	8.33	1	4.54	3	6.52
30 - 32	0	0.00	0	0.00	0	0.00
27 - 29	1	4.17	0	0.00	1	2.17
24 - 26	4	16.66	3	13.64	7	15.21
21 - 23	4	16.66	2	9.09	6	13.04
18 - 20	6	25.00	2	9.09	8	17.39
15 - 17	4	16.66	5	22.72	9	19.56
12 - 14	0	0.00	8	36.36	8	17.39
9 - 11	0	0.00	1	4.54	1	2.17
6 - 8	1	4.17	0	0.00	1	2.17
Total	24	99.99	22	99.98	46	99.96
Mean		22.75		17.5		
Median		21.0		15.25		
Sigma		7.41		7.59		
Sigma_m		1.54		1.65		
G. P.		5.8		5.1		

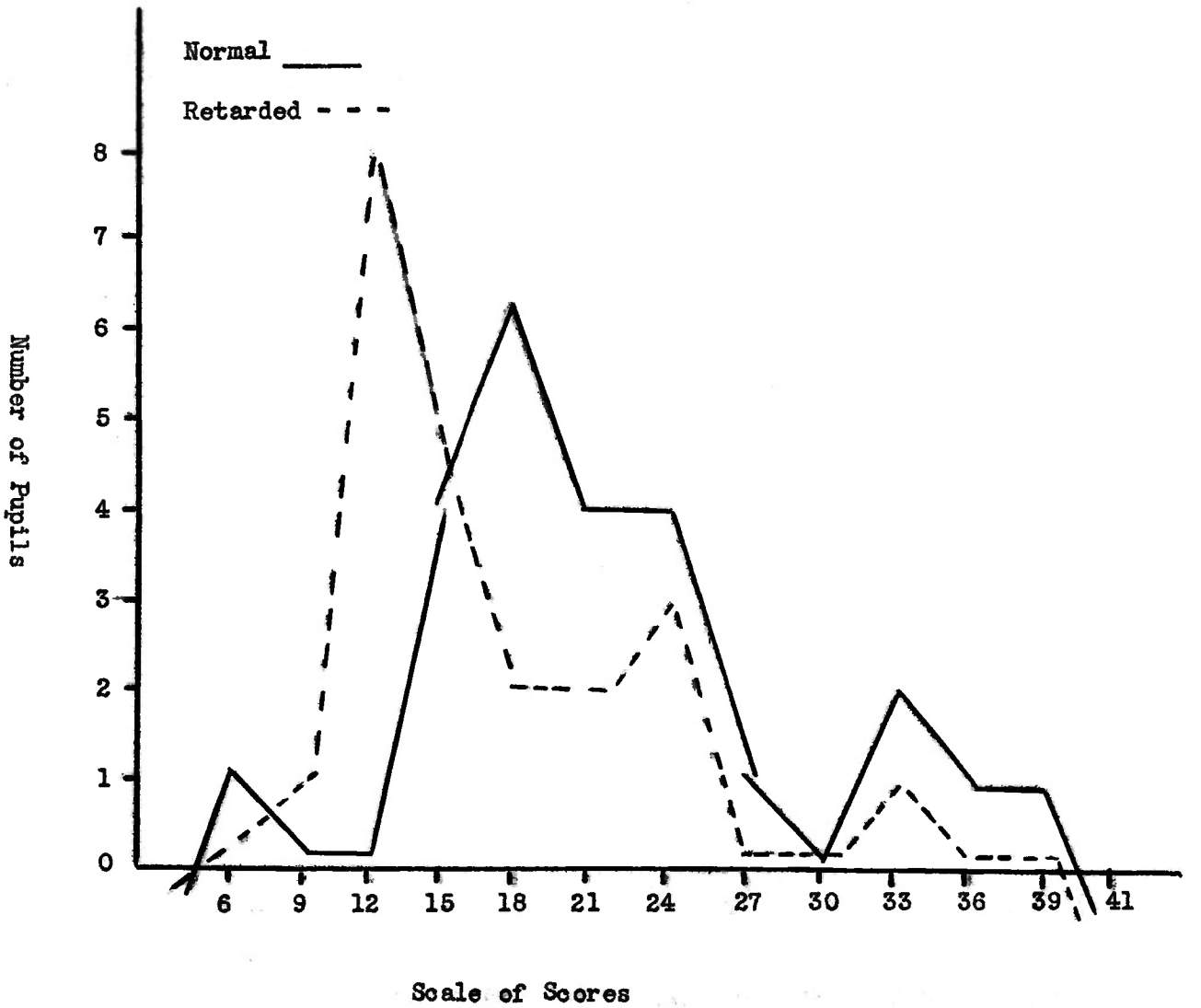

Fig. 6.- Frequency polygon of scores made by twenty-four normal and twenty-two retarded pupils on (Total Language) California Test of Mental Maturity.

TABLE 24

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF MENTAL MATURITY (TOTAL LANGUAGE FACTORS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	22.75	7.41	1.54			
and					2.25	5.25	2.33
Retarded	22	17.5	7.59	1.65			

a grade-placement of 5.1, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 24, page 72A, for the normal pupils the mean was 22.75, for the retarded pupils 17.5, with a difference of 5.25 in favor of the normal pupils. The median for the normal pupils was 21.0, and for the retarded pupils it was 15.25, with a difference of 3.75 in favor of the normal pupils. The standard deviation for the normal pupils was 7.41 and for the retarded pupils it was 7.59, with a difference of .18 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 1.54 and for the retarded pupils it was 1.65, with a difference of .11 in favor of the retarded pupils. The grade-placements were 5.8 and 5.1 for the normal and retarded groups, respectively, to show a difference of 0.7 in favor of the normally progressing pupils.

The "t" value for the two groups was 2.33. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence.

Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Language Factors" was not statistically significant.

Results on the California Test of Mental Maturity (Non Language Factors).--The data on "Non Language Factors" component of the California Test of Mental Maturity as revealed by the scores obtained by two groups of pupils, as presented in Table 25, page 74, and Figure 7, page 75, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Non Language Factors component for the normally progressing pupils indicated a range from a low of 12 to a high of 38, with a mean score of 24.63, a median score of 24.1, a standard deviation of 6.84, and a standard error of the mean of 1.43. Approximately 33.33 per cent of the normally progressing pupils scored above the mean, while 45.83 per cent of them scored below the mean, and 20.83 per cent of the normal pupils scored within the mean class-interval. The mean score of 24.63 indicated a grade-placement of 6.2, which is below the norm of expectancy.

Retarded Group.-- The data on the Non Language Factors component for the retarded pupils indicated a range from a low of 9 to a high of 35, with a mean score of 22.41, a median score of 22.0, a standard deviation of 5.28, and a standard error of the mean of 1.17. Approximately 31.81 per cent of the retarded pupils scored above the mean, while 31.81 per cent of them scored below the mean, and 36.36 per cent of the retarded pupils scored within the mean class-interval. The mean score of 22.41 indicated a grade-placement of 5.7, which is below the norm of expectancy.

TABLE 25

DISTRIBUTION OF THE RAW SCORES ON THE NON LANGUAGE FACTORS COMPONENT OF THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY (ELEMENTARY) 1950 AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
36 - 38	2	8.33	0	0.00	2	4.34
33 - 35	2	8.33	1	4.54	3	6.52
30 - 32	3	12.50	2	9.09	5	10.87
27 - 29	1	4.17	1	4.54	2	4.34
24 - 26	5	20.83	3	13.64	8	17.39
21 - 23	3	12.50	8	36.36	11	23.91
18 - 20	4	16.66	4	18.18	8	17.39
15 - 17	3	12.50	2	9.09	5	10.87
12 - 14	1	4.17	0	0.00	1	2.17
9 - 11	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.98	46	99.97
Mean		24.63		22.41		
Median		24.1		22.00		
Sigma		6.84		5.28		
$Sigma_m$		1.43		1.17		
G. P.		6.2		5.7		

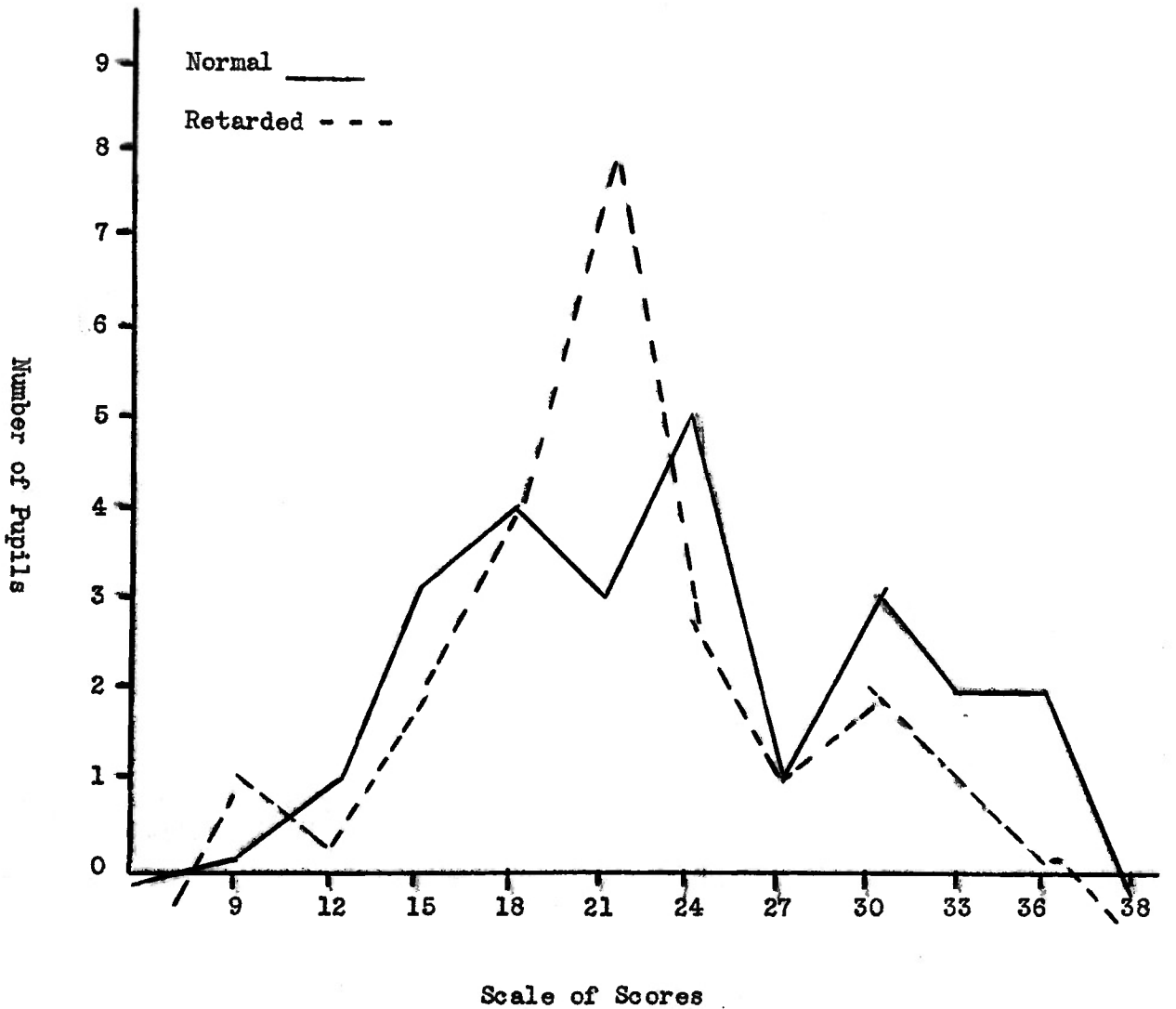

Fig. 7.- Frequency polygon of scores made by twenty-four normal and twenty-two retarded pupils on (Non Language Factors) California Test of Mental Maturity.

TABLE 26

SIGNIFICANT DIFFERENCE ON THE CALIFORNIA TEST OF MENTAL MATURITY (NON LANGUAGE FACTORS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	24.63	6.84	1.53			
and					1.84	2.22	1.2
Retarded	22	22.41	5.28	1.17			

Comparative Data and "t" Ratio.-- As indicated in Table 26, page 76, for the normal pupils the mean was 24.63, for the retarded pupils it was 22.41, with a difference of 2.22 in favor of the normal pupils. The median for the normal pupils was 24.1 and for the retarded pupils it was 22.0, with a difference of 2.1 in favor of the normal pupils. The standard deviation for the normal pupils was 6.84 and for the retarded pupils it was 5.28, with a difference of 1.56 in favor of the normal pupils. The standard error of the mean for the normal pupils was 1.43 and for the retarded pupils it was 1.17, with a difference of .26 in favor of the normal pupils. The grade-placements were 6.2 and 5.7 for the normal and retarded groups, respectively, to show a difference of 0.5 in favor of the normally progressing pupils.

The "t" value for the two groups was 1.2. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing

TABLE 27

DISTRIBUTION OF THE RAW SCORES ON THE SELF RELIANCE COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	1	4.17	0	0.00	1	2.17
10 - 11	3	12.50	2	9.09	5	10.86
8 - 9	11	45.82	11	50.00	22	47.82
6 - 7	8	33.33	7	31.81	15	32.62
4 - 5	1	4.17	2	9.09	3	6.52
2 - 3	0	0.00	0	0.00	0	0.00
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.99	46	99.99
Mean		8.08		7.68		
Median		7.86		7.86		
Sigma		1.72		1.54		
Sigma$_m$		0.36		0.34		
%-tile		60th		40th		

pupils and the group of educationally retarded pupils on the component of "Non Language Factors" was not statistically significant.

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY

Results of the California Test of Personality (Self Reliance).--The data on "Self Reliance" component of the California Test of Personality

as revealed by the scores obtained by the forty-six subjects comprising the two groups of the "normal" and "retarded" pupils of the Emery Street High School, Dalton, Georgia, as presented in Table 27, page 77, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Self Reliance component for the normally progressing pupils indicated a range from a low of 4 to a high of 12, with a mean score of 8.08, a median score of 7.86, a standard deviation of 1.72, and a standard error of the mean of 0.36. Approximately 16.67 per cent of the normally progressing pupils scored above the mean, while 37.50 per cent of them scored below the mean, and 45.82 per cent of the normal pupils scored within the mean class-interval. The mean score of 8.08 indicated a percentile rank of 60, which is above the norm of expectancy.

Retarded Group.-- The data on the Self Reliance component for the retarded pupils indicated a range from a low of 4 to a high of 11, with a mean score of 7.68, a median score of 7.86, a standard deviation of 1.54, and a standard error of the mean of 0.34. Approximately 9.09 per cent of the retarded pupils scored above the mean, while 40.90 per cent of them scored below the mean, and 50.00 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.68 indicated a percentile rank of 40, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 28, page 79, for the normal pupils the mean was 8.08, for the retarded pupils the mean was 7.68, with a difference of 0.40 in favor of the normal pupils. The median for the normal pupils was 7.86 and for the retarded pupils it was 7.86. The standard deviation for the normal pupils was 1.72 and for

TABLE 28

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (SELF RELIANCE) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	8.08	1.72	0.36			
and					0.49	0.40	0.81
Retarded	22	7.68	1.54	0.34			

the retarded pupils it was 1.54, with a difference of 0.18 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.36 and for the retarded pupils it was 0.34 in favor of the normal group. The percentile ranks were 60 and 40 for the normal and retarded groups, respectively, to show a difference of 20 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 0.81. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Self Reliance" was not statistically significant.

Results on the California Test of Personality (Sense of Personal Worth).-- The data on "Sense of Personal Worth" component of the California Test of Personality as revealed by the scores obtained by the two groups of pupils as presented in Table 29, page 80, are found in the

TABLE 29

DISTRIBUTION OF THE RAW SCORES ON THE SENSE OF PERSONAL WORTH COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	0	0.00	0	0.00	0	0.00
10 - 11	8	33.33	3	13.63	11	23.91
8 - 9	9	37.50	7	31.82	16	34.78
6 - 7	7	29.16	9	40.91	16	34.78
4 - 5	0	0.00	2	9.09	2	4.34
2 - 3	0	0.00	1	4.54	1	2.17
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.99	46	99.98
Mean		8.58		7.32		
Median		8.38		7.26		
Sigma		1.56		1.96		
$Sigma_m$		0.32		0.42		
%-tile		50th		40th		

separate paragraphs to follow.

Normal Group.-- The data on the Sense of Personal Worth component for the normally progressing pupils indicated a range from a low of 6 to a high of 11, with a mean score of 8.58, a median score of 8.38, a standard deviation of 1.56, and a standard error of the mean of 0.33. Approximately 33.33 per cent of the normally progressing pupils scored above the mean, while 29.16 per cent of them scored below the mean, and 37.50 per

TABLE 30

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (SENSE OF PERSONAL WORTH) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	8.58	1.56	0.32			
and					0.52	1.26	2.26
Retarded	22	7.32	1.96	0.42			

cent of the normal group scored within the mean class-interval. The mean score of 8.58 indicated a percentile rank of 50, which is at the norm of expectancy.

Retarded Group.-- The data on the Sense of Personal Worth component for the retarded pupils indicated a range from a low of 2 to a high of 11, with a mean score of 7.32, a median score of 7.26, a standard deviation of 1.96, and a standard error of the mean of 0.43. Approximately 45.45 per cent of the retarded pupils scored above the mean, while 13.63 per cent of them scored below the mean, and 40.91 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.32 indicated a percentile rank of 40, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 30, page 81, for the retarded pupils 7.32, with a difference of 1.26 in favor of the normal pupils. The median for the normal pupils was 8.38 and for the retarded pupils it was 7.26, with a difference of 1.14 in favor of the

normal pupils. The standard deviation for the normal pupils was 1.56 and for the retarded pupils it was 1.96 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.32 and for the retarded pupils it was 0.42 in favor of the retarded pupils. The percentile ranks were 50 and 40 for the normal and retarded groups, respectively, to show a difference of 10 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.26. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Sense of Personal Worth" was not statistically significant.

Results on the California Test of Personality (Sense of Personal Freedom).-- The data on the "Sense of Personal Freedom" component of the California Test of Personality as revealed by the scores obtained by the two groups, as presented in Table 31, page 83, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Sense of Personal Freedom component for the normally progressing pupils indicated a range from a low of 4 to a high of 12, with a mean score of 8.66, a median score of 8.75, a standard deviation of 2.14, and a standard error of the mean of 0.45. Approximately 37.50 per cent of the normal pupils scored above the mean, while 29.16 per cent of them scored below the mean, and 33.33 per cent of the normal group scored within the mean class-interval. The mean score of 8.66 indicated a percentile rank of 30, which is below the norm of expectancy.

TABLE 31

DISTRIBUTION OF THE RAW SCORES ON THE SENSE OF PERSONAL FREEDOM COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	2	8.33	1	4.54	3	6.52
10 - 11	7	29.17	4	18.18	11	23.91
8 - 9	8	33.33	6	27.27	14	30.43
6 - 7	5	20.83	9	40.91	14	30.43
4 - 5	2	8.33	1	4.54	3	6.52
2 - 3	0	0.00	1	4.54	1	2.17
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.98	46	99.98
Mean		8.66		7.77		
Median		8.75		7.5		
Sigma		2.14		2.22		
Sigma M		0.45		0.48		
%-tile		30th		20th		

Retarded Group.-- The data on the Sense of Personal Freedom component for the retarded pupils indicated a range from a low of 2 to a high of 12, with a mean score of 7.77, a median score of 7.5, a standard deviation of 2.22, and a standard error of the mean of 0.48. Approximately 22.72 per cent of the retarded pupils scored above the mean, while 49.99 per cent of them scored below the mean, and 27.27 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.77 indicated

TABLE 32

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (SENSE OF PERSONAL FREEDOM) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	8.66	2.14	0.45			
and					0.66	0.89	1.34
Retarded	22	7.77	2.22	0.48			

a percentile rank of 20, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 32, page 84, for the normal pupils the mean was 8.66, for the retarded pupils it was 7.77, with a difference of 0.89 in favor of the normal pupils. The median for the normal pupils was 8.75, and for the retarded pupils it was 7.5 with a difference of 1.25 in favor of the normal pupils. The standard deviation for the normal group was 2.14 and for the retarded pupils it was 2.22 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.45 and for the retarded pupils it was 0.48 in favor of the retarded pupils. The percentile ranks were 30 and 20 for the normal and retarded groups, respectively, to show a difference of 10 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 1.34. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally

TABLE 33

DISTRIBUTION OF THE RAW SCORES ON THE FEELING OF BELONGING COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	6	25.00	2	9.09	8	17.39
10 - 11	13	54.16	3	13.63	16	34.78
8 - 9	5	20.83	1	4.54	6	13.04
6 - 7	0	0.00	4	18.18	4	8.69
4 - 5	0	0.00	6	27.27	6	13.04
2 - 3	0	0.00	4	18.18	4	8.69
0 - 1	0	0.00	2	9.09	2	4.34
Total	24	99.99	22	99.98	46	99.97
Mean		10.58		7.04		
Median		10.55		5.16		
Sigma		3.18		3.66		
$Sigma_m$		0.66		0.79		
%-tile		40th		10th		

progressing pupils and the group of educationally retarded pupils on the component of "Sense of Personal Freedom" was not statistically significant.

Results of the California Test of Personality (Feeling of Belonging).--The data on the "Feeling of Belonging" component of the California Test of Personality as revealed by the scores obtained by the two groups, as presented in Table 33, page 85, are found in the separate paragraphs

to follow.

Normal Group.-- The data on the Feeling of Belonging component for the normally progressing pupils indicated a range from a low of 8 to a high of 12, with a mean score of 10.58, a median score of 10.55, a standard deviation of 3.18 and a standard error of the mean of 0.66. Approximately 25.00 per cent of the normally progressing pupils scored above the mean, while 20.83 per cent of them scored below the mean, and 54.16 per cent of the normal pupils scored within the mean class-interval. The mean score of 10.58 indicated a percentile rank of 40, which is below the norm of expectancy.

Retarded Group.-- The data on the Feeling of Belonging component for the retarded pupils indicated a range from a low of 0 to a high of 12, with a mean score of 7.04, a median score of 5.16, a standard deviation of 3.66, and a standard error of the mean of 0.79. Approximately 27.26 per cent of the retarded pupils scored above the mean, while 54.54 per cent of them scored below the mean, and 18.18 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.04 indicated a percentile rank of 10, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 34, page 87, for the normal pupils the mean was 10.58, for the retarded pupils 7.04, with a difference of 3.54 in favor of the normal pupils. The median for the normal pupils was 10.55 and for the retarded pupils it was 5.16, with a difference of 5.39 in favor of the normal pupils. The standard deviation for the normal pupils was 3.18 and for the retarded pupils it was 3.66 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.66 and for the retarded pupils it was

TABLE 34

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (FEELING OF BELONGING) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	10.58	3.18	0.66			
and					1.02	3.54	3.46
Retarded	22	7.04	3.66	0.79			

0.79 in favor of the retarded pupils. The percentile ranks were 40 and ten for the normal and retarded groups, respectively, to show a difference of 30 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 3.46. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of retarded pupils on the component of "Feeling of Belonging" was statistically significant.

Results on the California Test of Personality (Withdrawing Tendencies).-- The data on the "Withdrawing Tendencies" component of the California Test of Personality as revealed by the scores obtained by the two groups of pupils, as presented in Table 35, page 88, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Withdrawing Tendencies component for the normally progressing pupils indicated a range from a low of 4 to a

TABLE 35

DISTRIBUTION OF THE RAW SCORES ON THE WITHDRAWING TENDENCIES COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	1	4.17	0	0.00	1	2.17
10 - 11	6	25.00	1	4.54	7	15.22
8 - 9	11	45.83	4	18.18	15	32.62
6 - 7	5	20.82	5	22.72	10	21.73
4 - 5	1	4.17	7	31.82	8	17.39
2 - 3	0	0.00	4	18.18	4	8.69
0 - 1	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.98	46	99.98
Mean		8.62		5.41		
Median		8.58		5.21		
Sigma		1.76		2.46		
Sigma$_m$		0.37		0.53		
%-tile		60th		30th		

high of 12, with a mean score of 8.62, a median score of 8.58, a standard deviation of 1.76, and a standard error of the mean of 0.37. Approximately 29.17 per cent of the normally progressing pupils scored above the mean, while 24.99 per cent of them scored below the mean, and 45.83 per cent of the normal pupils scored within the mean class-interval. The mean score of 8.62 indicated a percentile rank of 60, which is above the norm of expectancy.

TABLE 36

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (WITHDRAWING TENDENCIES) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff of Mean	"t"
Normal	24	8.62	1.76	0.37			
and					0.64	2.21	3.45
Retarded	22	5.41	2.46	0.53			

Retarded Group.-- The data on the Withdrawing Tendencies component for the retarded pupils indicated a range from a low of 0 to a high of eleven, with a mean score of 5.41, a median score of 5.21, a standard deviation of 2.46, and a standard error of the mean of 0.52. Approximately 45.44 per cent of the retarded pupils scored above the mean, while 22.72 per cent of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 5.41 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.--As indicated in Table 36, page 89, for the normal pupils the mean was 8.62, for the retarded pupils 5.41, with a difference of 2.21 in favor of the normal pupils. The median for the normal pupils was 8.58 and for the retarded pupils it was 5.21, with a difference of 3.37 in favor of the normal pupils. The standard deviation for the normal pupils was 1.76 and for the retarded pupils it was

2.46 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.37 and for the retarded pupils it was 0.53 in favor of the retarded pupils. The percentile ranks were 60 and 30 for the normal and retarded groups, respectively, to show a difference of 30 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 3.45. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Withdrawing Tendencies" was statistically significant.

Results on the California Test of Personality (Nervous Symptoms).-- The data on the "Nervous Symptoms" component of the California Test of Personality as revealed by the scores obtained by the two groups, and as presented in Table 37, page 91, are found in separate paragraphs to follow.

Normal Group.-- The data on the Nervous Symptoms component for the normally progressing pupils indicated a range from a low of 2 to a high of 12, with a mean score of 6.58, a median score of 7.05, a standard deviation of 2.36, and a standard error of the mean of 0.49. Approximately 41.66 per cent of the normally progressing pupils scored above the mean, while 20.83 per cent of them scored below the mean, and 37.50 per cent of the normal pupils scored within the mean class-interval. The mean score of 6.58 indicated a percentile rank of 20, which is below the norm of expectancy.

Retarded Group.-- The data on the Nervous Symptoms component for the retarded pupils indicated a range from a low of 2 to a high of 12, with a

TABLE 37

DISTRIBUTION OF THE RAW SCORES ON THE NERVOUS SYMPTOMS COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	1	4.17	1	4.54	2	4.34
10 - 11	4	16.66	9	40.91	13	28.26
8 - 9	5	20.83	3	13.63	8	17.39
6 - 7	9	37.50	4	18.18	13	28.26
4 - 5	4	16.66	3	13.63	7	15.22
2 - 3	1	4.17	2	9.09	3	6.52
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.98	46	99.99
Mean		6.58		8.05		
Median		7.05		9.28		
Sigma		2.36		2.90		
Sigma_m		0.49		0.62		
%-tile		20th		40th		

mean score of 8.05, a median score of 9.28, a standard deviation of 2.90, and a standard error of the mean of 0.62. Approximately 45.45 per cent of the retarded pupils scored above the mean, while 40.90 per cent of them scored below the mean, and 13.63 per cent of the retarded pupils scored within the mean class-interval. The mean score of 8.05 indicated a percentile rank of 40, which is below the norm of expectancy.

TABLE 38

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (NERVOUS SYMPTOMS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	6.58	2.36	0.49			
and					0.79	1.47	1.86
Retarded	22	8.05	2.90	0.62			

Comparative Data and "t" Ratio.-- As indicated in Table 38, page 92, for the normal pupils the mean was 6.58, for the retarded pupils 8.05, with a difference of 1.47 in favor of the retarded pupils. The median for the normal pupils was 7.05 and for the retarded pupils it was 9.28, with a difference of 2.23 in favor of the retarded pupils. The standard deviation for the normal pupils was 2.36, and for the retarded pupils it was 2.90 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.49 and for the retarded pupils it was 0.62 in favor of the retarded pupils. The percentile ranks were 20 and 40 for the normal and retarded groups, respectively, to show a difference of 20 in favor of the retarded pupils.

The "t" value for data on the two groups was 1.86. This "t" was not significant as it was less than 2.58 at the one per dent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the

component of "Nervous Symptoms" was not statistically significant.

Results on the California Test of Personality (Total Personal Adjustment).-- The data on the "Total Personal Adjustment" component of the California Test of Personality as revealed by the scores obtained by the two groups of pupils, and as presented in Table 39, page 94, and Figure 8, page 95, are found in separate paragraphs to follow.

Normal Group.-- The data on Total Personal Adjustment component for the normally progressing pupils indicated a range from a low of 39 to a high of 62, with a mean score of 50.5, a median score of 49.0, a standard deviation of 4.74, and a standard error of the mean of 0.99. Approximately 45.83 per cent of the normal pupils scored above the mean, while 37.50 per cent of them scored below the mean, and 16.66 per cent of the normal pupils scored within the mean class-interval. The mean score of 50.5 indicated a percentile rank of 40, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Personal Adjustment component for the retarded pupils indicated a range from a low of 30 to a high of fifty-six, with a mean score of 44.23, a median score of 46.0, a standard deviation of 7.38, and a standard error of the mean of 1.61. Approximately 49.99 per cent of the retarded pupils scored above the mean, while 36.36 per cent of them scored below the mean, and 13.64 per cent of the retarded pupils scored within the mean class-interval. The mean score of 44.23 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 40, page 96, for the normal pupils the mean was 50.5, for the retarded pupils 44.23,

TABLE 39

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL PERSONAL ADJUSTMENT COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
60 - 62	1	4.17	0	0.00	1	2.17
57 - 59	4	16.66	0	0.00	4	8.69
54 - 56	3	12.50	3	13.63	6	13.04
51 - 53	3	12.50	2	9.09	5	10.87
48 - 50	4	16.66	4	18.18	8	17.39
45 - 47	6	25.00	2	9.09	8	17.39
42 - 44	2	8.33	3	13.64	5	10.87
39 - 41	1	4.17	2	9.09	3	6.52
36 - 38	0	0.00	2	9.09	2	4.34
33 - 35	0	0.00	3	13.64	3	6.52
30 - 32	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.99	46	99.97
Mean		50.5		44.23		
Median		49.0		46.0		
Sigma		4.74		7.38		
Sigma_m		0.99		1.61		
%-tile		40th		30th		

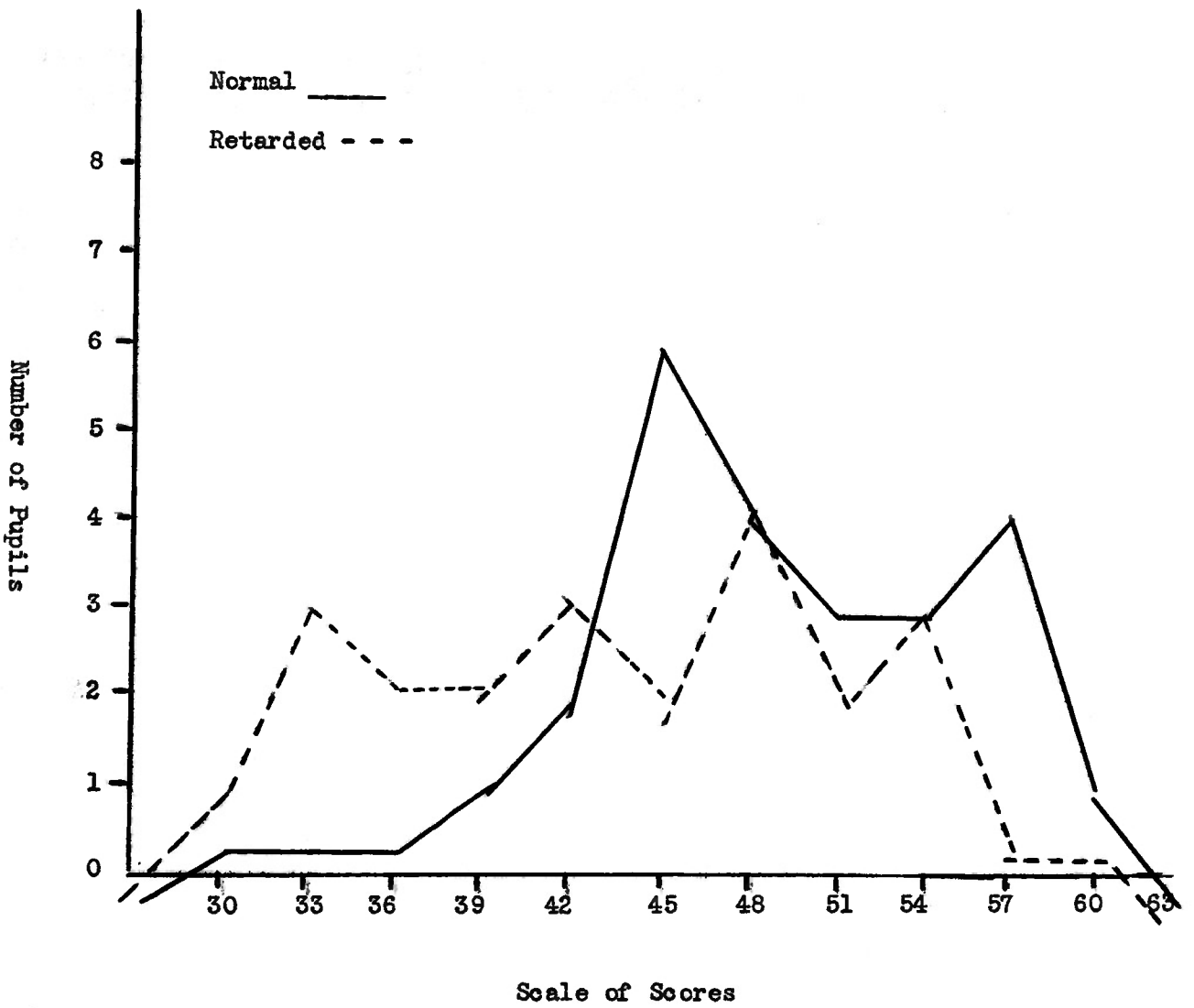

Fig. 8.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Personal Adjustment) California Test of Personality.

TABLE 40

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (TOTAL PERSONAL ADJUSTMENT) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	50.5	4.74	0.99			
and					1.89	6.27	3.1
Retarded	22	44.23	7.38	1.61			

with a difference of 6.27 in favor of the normal pupils. The median for the normal pupils was 49.0 and for the retarded pupils it was 46.0, with a difference of 3.0 in favor of the normal pupils. The standard deviation for the normal pupils was 4.74 and for the retarded pupils it was 7.38, with a difference of 2.64 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.99 and for the retarded pupils it was 1.61, with a difference of 0.62 in favor of the retarded pupils. The percentile ranks were 40 and 30 for the normal and retarded groups, respectively, to show a difference of 10 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 3.1. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Personal Adjustment" was statistically significant.

TABLE 41

DISTRIBUTION OF THE RAW SCORES ON THE SOCIAL STANDARDS COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	4	16.66	4	18.18	8	17.39
10 - 11	12	50.00	8	36.36	20	47.47
8 - 9	7	29.16	6	27.27	13	28.26
6 - 7	1	4.17	4	18.18	5	10.87
4 - 5	0	0.00	0	0.00	0	0.00
2 - 3	0	0.00	0	0.00	0	0.00
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.99	46	99.99
Mean	11.5		9.60			
Median	10.16		9.75			
Sigma	1.52		1.96			
$Sigma_m$	0.31		0.43			
%-tile	60th		20th			

Results on the California Test of Personality (Social Standards).-- The data on the "Social Standards" component of the California Test of Personality as revealed by scores obtained by the two groups, and as presented in Table 41, page 97, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Social Standards component for the normally progressing pupils indicated a range from a low of 6 to a high

of 12, with a mean score of 11.5, a median score of 10.16, a standard deviation of 1.52, and a standard error of the mean of 0.31. Approximately 16.66 per cent of the normal pupils scored above the mean, while 33.33 per cent of them scored below the mean, and 50.00 per cent of the normal group scored within the mean class-interval. The mean score of 11.5 indicated a percentile rank of 60, which is above the norm of expectancy.

Retarded Group.-- The data on Social Standards component for the retarded pupils indicated a range from a low of 6 to a high of 12, with a mean score of 9.60, a median score of 9.75, a standard deviation of 1.96, and a standard error of the mean of 0.43. Approximately 18.18 per cent of the retarded pupils scored above the mean, while 45.45 per cent of them scored below the mean, and 36.36 per cent of the retarded pupils scored within the mean class-interval. The mean score of 9.60 indicated a percentile rank of 20, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 42, page 99, for the normal pupils the mean was 11.5, for the retarded pupils it was 9.60, with a difference of 1.90 in favor of the normal pupils. The median for the normal pupils was 10.16 and for the retarded pupils it was 9.75, with a difference of 0.41 in favor of the normal pupils. The standard deviation for the normal pupils was 1.52 and for the retarded pupils it was 1.96, with a difference of 0.44 in favor of the retarded pupils. The standard error of the mean for the normal group was 0.31 and for the retarded pupils it was 0.43, with a difference of 0.12 in favor of the retarded pupils. The percentile ranks were 60 and 20 for the normal and retarded groups, respectively, to show a difference of 40 in favor of the

TABLE 42

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (SOCIAL STANDARDS) OF THE FORTY -SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	11.5	1.52	0.31			
and					0.53	1.90	3.58
Retarded	22	9.60	1.96	0.43			

normally progressing pupils.

The "t" value for the two groups was 3.58. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Social Standards" was statistically significant.

Results on the California Test of Personality (Social Skills).--The data on the "Social Skills" component of the California Test of Personality as revealed by the scores obtained by the two groups, and as presented in Table 43, page 100, are found in separate paragraphs to follow.

Normal Group.-- The data on the Social Skills component for the normally progressing pupils indicated a range from a low of 4 to a high of 12, with a mean score of 8.34, a median score of 8.84, a standard deviation of 2.16, and a standard error of the mean of 0.45.

TABLE 43

DISTRIBUTION OF THE RAW SCORES ON THE SOCIAL SKILLS COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	0	0.00	0	0.00	0	0.00
10 - 11	9	37.50	7	31.81	16	34.78
8 - 9	7	29.16	9	40.91	16	34.78
6 - 7	6	25.00	3	13.63	9	19.56
4 - 5	1	4.16	1	4.54	2	4.34
2 - 3	1	4.16	2	9.09	3	6.52
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.98	22	99.98	46	99.98
Mean		8.34		8.14		
Median		8.84		8.61		
Sigma		2.16		2.38		
$Sigma_m$		0.45		0.51		
%-tile		30th		30th		

Approximately 66.66 per cent of the normally progressing pupils scored above the mean, while 8.32 per cent of them scored below the mean, and 25.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 8.34 indicated a percentile rank of 30, which is below the norm of expectancy.

Retarded Group.-- The data on the Social Skills component for the

TABLE 44

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (SOCIAL SKILLS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	8.34	2.16	0.45			
and					0.68	0.20	0.29
Retarded	22	8.14	2.38	0.51			

retarded pupils indicated a range from a low of 4 to a high of 12, with a mean score of 8.14, a median score of 8.61, a standard deviation of 2.38, a standard error of the mean of 0.51. Approximately 72.72 per cent of the retarded pupils scored above the mean, while 13.63 per cent of them scored below the mean, and 13.63 per cent of the retarded pupils scored within the mean class-interval. The mean score of 8.14 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 44, page 101, for the normal pupils the mean was 8.34, for the retarded pupils 8.14, with a difference of 0.20 in favor of the normal pupils. The median for the normal pupils was 8.84 and for the retarded pupils it was 8.61, with a difference of 0.23 in favor of the normal pupils. The standard deviation for the normal pupils was 2.16 and for the retarded pupils it was 2.38, with a difference of 0.22 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.45 and for the

retarded pupils it eas 0.51, with a difference of .06 in favor of the retarded pupils. The percentile ranks were 30 and 30 for the normal and retarded groups, respectively, to show no difference.

The "t" value for the data on the two groups was 0.29. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Social Skills" was not statistically significant.

Results on the California Test of Personality (Anti-Social Tendencies).-- The data on the "Anti-Social Tendencies" component of the California Test of Personality as revealed by the scores obtained by the two groups, and as presented in Table 45, page 103, are found in the separate paragraphs to follow.

Normal Group.-- The data on Anti-Social Tendencies component for the normally progressing pupils indicated a range from a low of 2 to a high of 11, with a mean score of 8.34, a median score of 8.84, a standard deviation of 2.16, and a standard error of the mean of 0.45. Approximately 66.66 per cent of the normally progressing pupils scored above the mean, while 8.32 per cent of them scored below the mean, and 25.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 8.34 indicated a percentile rank of 30, which is below the norm of expectancy.

Retarded Group.-- The data on Anti-Social Tendencies component for retarded pupils indicated a range from a low of 2 to a high of 12, with a mean score of 8.50, a median score of 9.1, a standard deviation of 3.60, and a standard error of the mean of 0.78. Approximately 54.54 per

TABLE 45

DISTRIBUTION OF THE RAW SCORES ON THE ANTI-SOCIAL TENDENCIES COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	0	0.00	2	9.09	2	4.34
10 - 11	9	37.50	10	45.45	19	41.30
8 - 9	7	29.16	1	4.54	8	17.39
6 - 7	6	25.00	5	22.72	11	23.91
4 - 5	1	4.16	2	9.09	3	6.52
2 - 3	1	4.16	2	9.09	3	6.52
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.98	22	99.98	46	99.98
Mean		8.34		8.50		
Median		8.84		9.1		
Sigma		2.16		3.60		
$Sigma_m$		0.45		0.78		
%-tile		30th		30th		

cent of the retarded pupils scored above the mean, while 40.90 per cent of them scored below the mean, and 4.54 per cent of the retarded group scored within the mean class-interval. The mean score of 8.50 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 46, page 104, for the normal pupils the mean was 8.34, for the retarded pupils 8.50, with a difference of 0.16 in favor of the retarded pupils. The median

TABLE 46

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (ANTI-SOCIAL TENDENCIES) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Cases	"t"
Normal	24	8.34	2.16	0.45			
and					0.90	0.16	0.17
Retarded	22	8.50	3.60	0.78			

for the normal group was 8.84 and for the retarded pupils it was 9.1, with a difference of 0.26 in favor of the retarded pupils. The standard deviation for the normal pupils was 2.16 and for the retarded pupils it was 3.60, with a difference of 1.44 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.45 and for the retarded pupils it eas 0.78, with a difference of 0.33 in favor of the retarded pupils. The percentile ranks were 30 and 30 for the normal and retarded groups, respectively, to show no difference.

The "t" value for data on the two groups was 0.17. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Anti-Social Tendencies" was not statistically significant.

Results on the California Test of Personality (Family Relations).-- The data on the "Family Relations" component of the California Test of

TABLE 47

DISTRIBUTION OF THE RAW SCORES ON THE FAMILY RELATIONS COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	6	25.00	5	22.72	11	23.91
10 - 11	8	33.33	5	22.72	13	28.26
8 - 9	4	16.66	4	18.18	8	17.39
6 - 7	5	20.83	6	27.27	11	23.91
4 - 5	1	4.17	2	9.09	3	6.52
2 - 3	0	0.00	0	0.00	0	0.00
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.98	46	99.99
Mean		9.59		8.95		
Median		10.0		8.5		
Sigma		2.38		2.66		
Sigma_m		0.49		0.58		
%-tile		30th		30th		

Personality as revealed by the scores obtained by the two groups, and as presented in Table 47, page 105, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Family Relations component for the normally progressing pupils indicated a range from a low of 4 to a high of 12, with a mean score of 9.59, a median score of 10.00, a standard

deviation of 2.38, and a standard error of the mean of 0.49. Approximately 25.00 per cent of the normally progressing pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 33.33 per cent of the normal group scored within the mean class-interval. The mean score of 9.59 indicated a percentile rank of 30, which is below the norm of expectancy.

Retarded Group.-- The data on the Family Relations component for the retarded pupils indicated a range from a low of 4 to a high of 12, with a mean score of 8.95, a median score of 8.5, a standard deviation of 2.66, and a standard error of the mean of 0.58. Approximately 45.44 per cent of the retarded pupils scored above the mean, while 36.36 per cent of them scored below the mean, and 18.18 per cent of the retarded pupils scored within the mean class-interval. The mean score of 8.95 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 48, page 107, for the normal pupils the mean was 9.59, for the retarded pupils 8.95, with a difference of 0.64 in favor of the normal pupils. The median for the normal pupils was 10.00 and for the retarded pupils it was 8.5, with a difference of 1.5 in favor of the normal pupils. The standard deviation for the normal pupils was 2.38 and for the retarded pupils it was 2.66, with a difference of .28 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.49 and for the retarded pupils it was 0.58, with a difference of .09 in favor of the retarded pupils. The percentile ranks were 30 and 30 for the normal and retarded groups, respectively, to show no difference.

The "t" value for the data on the two groups was 0.85. This "t" was

TABLE 48

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (FAMILY RELATIONS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	9.59	2.38	0.49			
and					0.75	0.64	0.85
Retarded	22	8.95	2.66	0.58			

not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Family Relations" was not statistically significant.

Results on the California Test of Personality (School Relations).-- The data on the "School Relations" component of the California Test of Personality as revealed by the scores obtained by the two groups, and as presented in Table 49, page 108, are found in the separate paragraphs to follow.

Normal Group.-- The data on the School Relations component for the normally progressing pupils indicated a range from a low of 4 to a high of 12, with a mean score of 9.5, a median score of 9.78, a standard deviation of 2.52, and a standard error of the mean of 0.52. Approximately 25.00 per cent of the normally progressing pupils scored above the mean, while 45.82 per cent of them scored below the mean, and 29.17 per cent

TABLE 49

DISTRIBUTION OF THE RAW SCORES ON THE SCHOOL RELATIONS COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	6	25.00	2	9.09	8	17.38
10 - 11	7	29.17	5	22.72	12	26.09
8 - 9	5	20.83	7	31.82	12	26.09
6 - 7	4	16.66	6	27.27	10	21.73
4 - 5	2	8.33	2	9.09	4	8.69
2 - 3	0	0.00	0	0.00	0	0.00
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.99	46	99.99
Mean		9.5		7.59		
Median		9.78		8.37		
Sigma		2.52		2.20		
Sigma_m		0.52		0.48		
%-tile		50th		30th		

of the normal group scored within the mean class-interval. The mean score of 9.5 indicated a percentile rank of 50, which is at the norm of expectancy.

Retarded Group.-- The data on the School Relations component for the retarded pupils indicated a range from a low of 4 to a high of 12, with a mean score of 7.59, a median score of 8.37, a standard deviation of

TABLE 50

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (SCHOOL RELATIONS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	9.5	2.52	0.52			
and					0.71	1.91	2.68
Retarded	22	7.59	2.20	0.48			

2.20, and a standard error of the mean of 0.48. Approximately 31.81 per cent of the retarded pupils scored above the mean, while 36.36 per cent of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.59 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 50, page 109, for the normal pupils the mean was 9.5, for the retarded pupils 7.59, with a difference of 1.91 in favor of the normal pupils. The median for the normal pupils was 9.78 and for the retarded pupils it was 8.37, with a difference of 1.41 in favor of the normal pupils. The standard deviation for the normal pupils was 2.52 and for the retarded pupils it was 2.20, with a difference of .32 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.52 and for the retarded pupils it was 0.48, with a difference of .03 in favor of the normal pupils. The percentile ranks were 50 and 30 for the normal and

retarded groups, respectively, to show a difference of 20 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.72. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "School Relations" was statistically significant.

Results on the California Test of Personality (Community Relations).-- The data on the "Community Relations" component of the California Test of Personality as revealed by the scores obtained by the two groups, and as presented in Table 51, page 111, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Community Relations component for the normally progressing pupils indicated a range from a low of 6 to a high of 12, with a mean score of 9.66, a median score of 9.83, a standard deviation of 1.52, and a standard error of the mean of 0.32. Approximately 8.33 per cent of the normally progressing pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 50.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 9.66 indicated a percentile rank of 20, which is below the norm of expectancy.

Retarded Group.-- The data on the Community Relations component for the retarded pupils indicated a range from a low of 2 to a high of 11, with a mean score of 9.14, a median score of 8.77, a standard deviation of 1.74, and a standard error of the mean of 0.38. Approximately 31.81 per cent of the retarded pupils scored above the mean, while 18.18 per

TABLE 51

DISTRIBUTION OF THE RAW SCORES ON THE COMMUNITY RELATIONS COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 -	2	8.33	0	0.00	2	4.34
10 - 11	12	50.00	7	31.81	19	41.30
8 - 9	8	33.33	11	50.00	19	41.30
6 - 7	2	8.33	3	13.64	5	10.87
4 - 5	0	0.00	0	0.00	0	0.00
2 - 3	0	0.00	1	4.54	1	2.17
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.99	46	99.99
Mean		9.66		9.14		
Median		9.83		8.77		
Sigma		1.52		1.74		
Sigma $_{M}$		0.32		0.38		
%-tile		20th		20th		

cent of them scored below the mean, and 50.00 per cent of the retarded pupils scored within the mean class-interval. The mean score of 9.14 indicated a percentile rank of 20, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 52, page 112, for the normal pupils the mean was 9.66, for the retarded pupils it was 9.14, with a difference of 0.42 in favor of the normal pupils. The

TABLE 52

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (COMMUNITY RELATIONS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	9.66	1.52	0.32			
and					0.50	0.42	0.84
Retarded	22	9.14	1.74	0.38			

median for the normal pupils was 9.83 and for the retarded pupils it was 8.77, with a difference of 1.06 in favor of the normal pupils. The standard deviation for the normal pupils was 1.52 and for the retarded pupils it was 1.74, with a difference of .22 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.32 and for the retarded pupils it was 0.38, with a difference of .06 in favor of the retarded pupils. The percentile ranks were 20 and 20 for the normal and retarded groups, respectively, to show no difference.

The "t" value for data on the two groups was 0.84. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Community Relations" was not statistically significant.

Results on the California Test of Personality (Total Social Adjustment).-- The data on the "Total Social Adjustment" component of the

TABLE 53

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL SOCIAL ADJUSTMENT COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
65 - 69	4	16.66	0	0.00	4	8.69
60 - 64	7	29.16	5	22.72	12	26.09
55 - 59	2	8.33	7	31.82	9	19.56
50 - 54	6	25.00	3	13.64	9	19.56
45 - 49	2	8.33	3	13.64	5	10.87
40 - 44	3	12.50	2	9.09	5	10.87
35 - 39	0	0.00	1	4.54	1	2.17
30 - 34	0	0.00	0	0.00	0	0.00
25 - 29	0	0.00	1	4.54	1	2.17
Total	24	99.98	22	99.99	46	99.98
Mean		57.42		52.69		
Median		58.79		55.21		
Sigma		8.9		8.25		
$Sigma_m$		1.86		1.80		
%-tile		40th		30th		

California Test of Personality as revealed by the scores obtained by two groups of pupils, and as presented in Table 53, page 113, and Figure 9, page 114, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Social Adjustment component

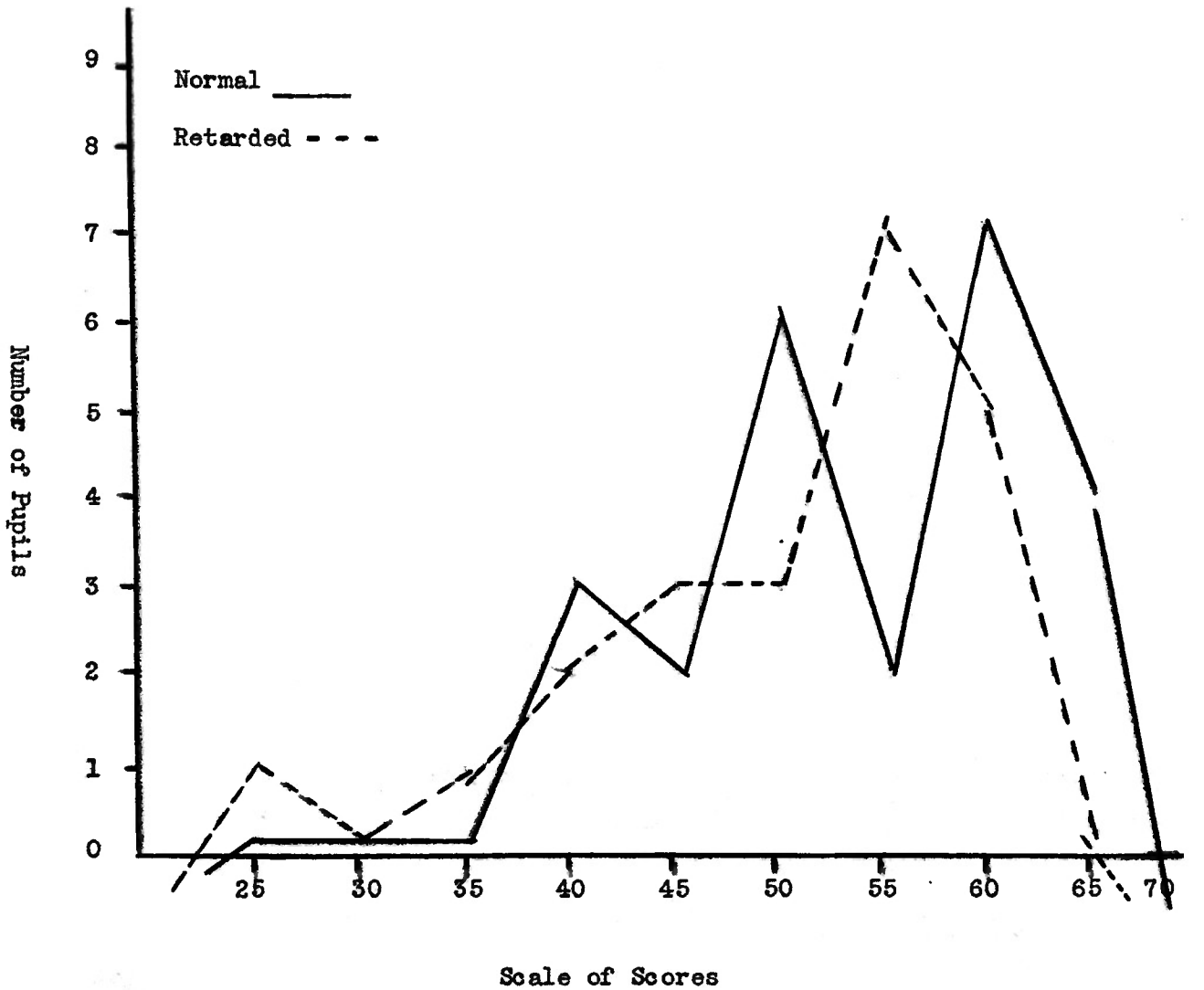

Fig. 9.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Social Adjustment) California Test of Personality.

for the normally progressing pupils indicated a range from a low of 40 to a high of 69, with a mean of 57.42, a median of 58.79, a standard deviation of 8.9, and a standard error of the mean of 1.86. Approximately 45.82 per cent of the normally progressing pupils scored above the mean, while 45.83 per cent of them scored below the mean, and 8.33 per cent of the normally progressing pupils scored within the mean class-interval. The mean score of 57.42 indicated a percentile rank of 40, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Social Adjustment component for the retarded pupils indicated a range from a low of 25 to a high of sixty-four, with a mean score of 52.69, a median score of 55.21, a standard deviation of 8.25, and a standard error of the mean of 1.80. Approximately 54.54 per cent of the retarded pupils scored above the mean, while 31.81 per cent of them scored below the mean, and 13.64 per cent of the retarded pupils scored within the mean class-interval. The mean score of 52.69 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 54, page 116, for the normal pupils the mean was 57.42, for the retarded pupils it was 52.69, with a difference of 4.73 in favor of the normal pupils. The median for the normal pupils was 58.79 and for the retarded pupils it was 55.21, with a difference of 3.58 in favor of the normal pupils. The standard deviation for the normal pupils was 8.9 and for the retarded pupils it was 8.25, with a difference of .65 in favor of the normal pupils. The standard error of the mean for the normal pupils was 1.86 and for the retarded pupils it was 1.80, with a difference of .06 in favor of the

TABLE 54

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (TOTAL SOCIAL ADJUSTMENT) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	57.42	8.9	1.86			
and					2.58	4.73	1.83
Retarded	22	52.69	8.25	1.80			

normal pupils. The percentile ranks were 40 and 30 for the normal and retarded groups, respectively, to show a difference of 10 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 1.83. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Social Adjustment" was not statistically significant.

Results on the California Test of Personality (Total Adjustment).-- The data on the "Total Adjustment" component of the California Test of Personality as revealed by the scores obtained by the two groups of pupils, and as presented in Table 55, page 117, and Figure 10, page 118, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Adjustment component for the

TABLE 55

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL ADJUSTMENT COMPONENT OF THE CALIFORNIA TEST OF PERSONALITY AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
125 - 129	1	4.17	0	0.00	1	2.17
120 - 124	4	16.66	0	0.00	4	8.69
115 - 119	2	8.33	2	9.09	4	8.69
110 - 114	3	12.50	2	9.09	5	10.87
105 - 109	6	25.00	2	9.09	8	17.39
100 - 104	1	4.17	4	18.18	5	10.87
95 - 99	3	12.50	7	31.82	10	21.73
90 - 94	3	12.50	1	4.54	4	8.69
85 - 89	1	4.17	0	0.00	1	2.17
80 - 84	0	0.00	0	0.00	0	0.00
75 - 79	0	0.00	4	18.18	4	8.69
Total	24	100.00	22	99.99	46	99.96
Mean		107.62		97.90		
Median		107.8		99.78		
Sigma		11.10		12.10		
$Sigma_m$		2.31		2.64		
%-tile		40th		30th		

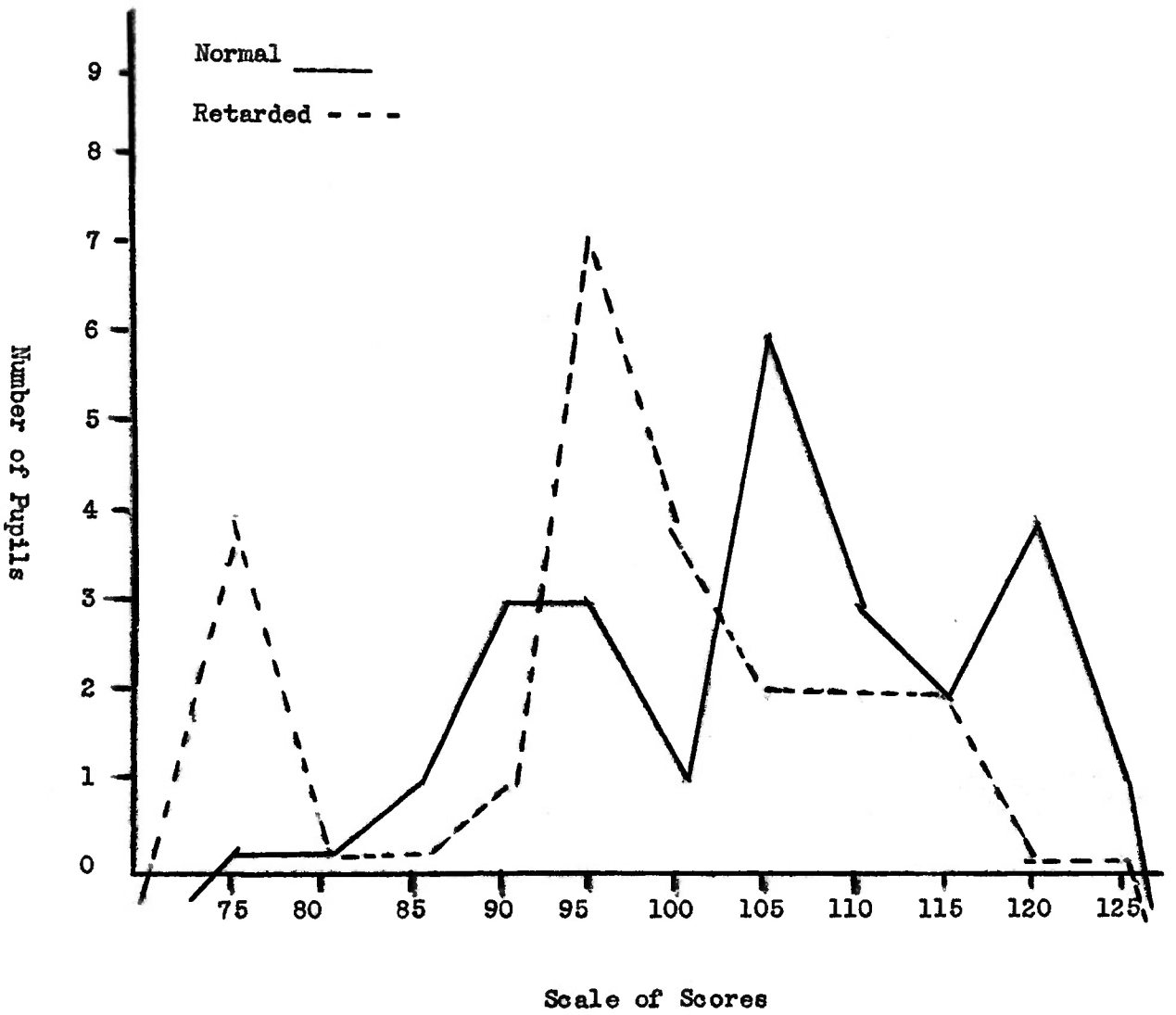

Fig. 10.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Adjustment) California Test of Personality.

normally progressing pupils indicated a range from a low of 85 to a high of 129, with a mean score of 107.62, a median score of 107.8, a standard deviation of 11.10, and a standard error of the mean of 2.31. Approximately 41.66 per cent of the normally progressing pupils scored above the mean, while 33.34 per cent of them scored below the mean, and 25.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 107.62 indicated a percentile rank of 40, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Adjustment component for the retarded pupils indicated a range in scores from a low of 75 to a high of 119, with a mean score of 97.90, a median score of 99.78, a standard deviation of 12.10 and a standard error of the mean of 2.64. Approximately 45.45 per cent of the retarded pupils scored above the mean, while 22.72 per cent of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 97.90 indicated a percentile rank of 30, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 56, page 120, for the normal pupils the mean was 107.62, for the retarded pupils 97.90, with a difference of 9.72 in favor of the normal pupils. The median for the normal pupils was 107.8 and for the retarded pupils it was 99.78, with a difference of 8.02 in favor of the normal pupils. The standard deviation for the normal pupils was 11.10 and for the retarded pupils it was 12.10, with a difference of 1.0 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 2.31 and for the retarded pupils it was 2.64, with a difference of .33 in

TABLE 56

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF PERSONALITY (TOTAL ADJUSTMENT) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	107.62	11.10	2.31			
and					3.51	9.72	2.76
Retarded	22	97.90	12.10	2.64			

favor of the retarded pupils. The percentile ranks were 40 and 30 for the normal and retarded groups, respectively, to show a difference of 10 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.76. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Adjustment" was statistically significant.

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA TEST OF ACHIEVEMENT

Results on the California Achievement Test (Mathematics).-- The data on the "Mathematics" component of the California Achievement Test as revealed by the scores obtained by the forty-six subjects comprising the two groups of the "normal" and "retarded" pupils of the Emery Street

High School, Dalton, Georgia, as presented in Table 57, page 122, are found in the separate paragraphs to follow.

Normal Group.-- The data on Mathematics component for the normally progressing pupils indicated a range from a low of 6 to a high os 21, with a mean score of 11.67, a median score of 10.64, a standard deviation of 3.66, and a standard error of the mean of 0.76. Approximately 37.50 per cent of the normally progressing pupils scored aboeve the mean, while 33.33 per cent of them scored below the mean, and 29.16 per cent of the normal pupils scored within the mean class-interval. The mean score of 11.67 indicated a grade-placement of 5.6, which is below the norm of expectancy.

Retarded Group.-- The data on the Mathematics component for the retarded pupils indicated a range from a low of 2 to a high of 17, with a mean score of 9.32, a median score of 9.17, a standard deviation of 3.82, and a standard error of the mean of 0.83. Approximately 45.45 per cent of the retarded pupils scored above the mean, while 27.27 per cent of them scored above the mean, and 27.27 per cent of the retarded pupils scored within the mean class-interval. The mean score of 9.32 indicated a grade-placement of 5.1, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 58, page 123, for the normal pupils the mean was 11.67, for the retarded pupils it was 9.32, with a difference of 2.35 in favor of the normal pupils. The median for the normal pupils was 10.64 and for the retarded pupils it was 9.17, with a difference of 1.47 in favor of the normal pupils. The standard deviation for the normal pupils was 3.66 and for the retarded pupils it was 3.82, with a difference of .16 in favor of the retarded

TABLE 57

DISTRIBUTION OF THE RAW SCORES ON THE MATHEMATICS COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
20 - 21	1	4.17	0	0.00	1	2.17
18 - 19	1	4.17	0	0.00	1	2.17
16 - 17	2	8.33	2	9.09	4	8.69
14 - 15	5	20.83	1	4.54	6	13.04
12 - 13	0	0.00	3	13.64	3	6.52
10 - 11	7	29.16	4	18.18	11	23.91
8 - 9	5	20.83	6	27.27	11	23.91
6 - 7	3	12.50	3	13.64	6	13.04
4 - 5	0	0.00	1	4.54	1	2.17
2 - 3	0	0.00	2	9.09	2	4.34
Total	24	99.99	22	99.99	46	99.96
Mean		11.67		9.32		
Median		10.64		9.17		
Sigma		3.66		3.82		
$Sigma_m$		0.76		0.83		
G. P.		5.6		5.1		

TABLE 58

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (MATHEMATICS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	11.67	3.66	0.76			
and					1.12	2.35	2.09
Retarded	22	9.32	3.82	0.83			

pupils. The standard error of the mean for the normal pupils was 0.76 and for the retarded pupils it was 0.83, with a difference of .07 in favor of the retarded pupils. The grade-placements were 5.6 and 5.1 for the normal and retarded groups, respectively, to show a difference of 0.5 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.09. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Mathematics" was not statistically significant.

Results on the California Achievement Test (Science).-- The data on the "Science" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 59, page 124, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Science component for the normally

TABLE 59

DISTRIBUTION OF THE RAW SCORES ON THE SCIENCE COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
20 - 21	0	0.00	0	0.00	0	0.00
18 - 19	1	4.17	0	0.00	1	2.17
16 - 17	1	4.17	0	0.00	1	2.17
14 - 15	2	8.33	0	0.00	2	4.34
12 - 13	3	8.33	1	4.54	3	6.52
10 - 11	8	33.33	4	18.18	12	26.09
8 - 9	7	29.16	2	9.09	9	19.56
6 - 7	1	4.17	9	40.91	10	21.73
4 - 5	2	8.33	5	22.72	7	15.22
2 - 3	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.98	46	99.97
Mean		10.33		7.05		
Median		10.0		6.61		
Sigma		3.26		2.50		
$Sigma_m$		0.69		0.54		
G. P.		7.0		5.5		

progressing pupils indicated a range from a low of 4 to a high of 19, with a mean score of 10.33, a median score of 10.00, a standard deviation of 3.26, and a standard error of the mean of 0.69. Approximately 25.00 per cent of the normally progressing pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 33.33 per cent of the normal pupils scored within the mean class-interval. The mean score of 10.33 indicated a grade-placement of 7.0, which is at the norm of expectancy.

Retarded Group.-- The data on the Science component for the retarded pupils indicated a range from a low of 2 to a high of 13, with a mean score of 7.05, a median score of 6.61, a standard deviation of 3.26, and a standard error of the mean of 0.54. Approximately 31.81 per cent of the retarded pupils scored above the mean, while 27.26 per cent of them scored below the mean and 40.91 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.05 indicated a grade-placement of 5.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 60, page 126, for the normal pupils the mean was 10.33, for the retarded pupils it was 7.05, with a difference of 3.28 in favor of the normal pupils. The median for the normal pupils was 10.0 and for the retarded pupils it was 6.61, with a difference of 3.39 in favor of the normal pupils. The standard deviation for the normal pupils was 3.26, and for the retarded pupils it was 2.50, with a difference of .76 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.69 and for the retarded pupils it was 0.54, with a difference of .15 in favor of the normal pupils. The grade-placements were 7.0 and 5.5 for

TABLE 60

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (SCIENCE) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	10.33	3.26	0.69			
and					0.88	3.28	3.71
Retarded	22	7.05	2.50	0.54			

the normal and retarded groups, respectively, to show a difference of 1.5 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 3.71. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Science" was statistically significant.

Results on the California Achievement Test (Social Science).-- The data on the "Social Science" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 61, page 127, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Social Science component for the normally progressing pupils indicated a range from a low of 4 to a high of 19, with a mean score of 8.92, a median score of 8.36, a standard

TABLE 61

DISTRIBUTION OF THE RAW SCORES ON THE SOCIAL SCIENCE COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
20 - 21	0	0.00	0	0.00	0	0.00
18 - 19	1	4.17	1	4.54	2	4.34
16 - 17	2	8.33	0	0.00	2	4.34
14 - 15	0	0.00	0	0.00	0	0.00
12 - 13	1	4.17	1	4.54	2	4.34
10 - 11	4	16.66	1	4.54	5	10.87
8 - 9	7	29.16	4	18.18	11	23.91
6 - 7	4	16.66	5	22.72	9	19.56
4 - 5	5	20.83	7	31.82	12	26.09
2 - 3	0	0.00	3	13.64	3	6.52
Total	24	99.98	22	99.98	46	99.97
Mean		8.92		6.68		
Median		8.36		5.79		
Sigma		3.82		3.70		
$Sigma_m$		0.79		0.81		
G. P.		5.9		5.5		

deviation of 3.82, and a standard error of the mean of 0.79. Approximately 33.33 per cent of the normally progressing group scored above the mean, while 37.49 per cent of them scored below the mean, and 29.16 per cent of the normal group scored within the mean class-interval. The

mean score of 8.92 indicated a grade-placement of 5.9, which is below the norm of expectancy.

Retarded Group.-- The data on the Social Science for the pupils indicated a range from a low of 2 to a high of 19, with a mean score of 6.68, a median score of 5.79, a standard deviation of 3.70, and a standard error of the mean of 0.81. Approximately 31.80 per cent of the retarded pupils scored above the mean, while 45.46 per cent of them scored below the mean, and 22.72 per cent of the retarded pupils scored within the mean class-interval. The mean scores of 6.68 indicated a grade-placement of 5.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 62, page 129, for the normal pupils the mean was 8.92, for the retarded pupils it was 6.68, with a difference of 2.24 in favor of the normal pupils. The median for the normal pupils was 8.36 and for the retarded pupils it was 5.79, with a difference of 2.57 in favor of the normal pupils. The standard deviation for the normal pupils was 3.82 and for the retarded pupils it was 3.70, with a difference of .12 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.79 and for the retarded pupils it was 0.81, with a difference of .02 in favor of the retarded pupils. The grade-placements were 5.9 and 5.5 for the normal and retarded groups, respectively, to show a difference of 0.4 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 1.97. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the

TABLE 62

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (SOCIAL SCIENCE) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	8.92	3.82	0.79			
and					1.13	2.24	1.97
Retarded	22	6.68	3.70	0.81			

component of "Social Science" was not statistically significant.

Results on the California Achievement Test (General Vocabulary).-- The data on the "General Vocabulary" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 63, page 130, are found in the separate paragraphs to follow.

Normal Group.-- The data on General Vocabulary component for the normally progressing pupils indicated a range in score from a low of 4 to a high of 17, with a mean score of 9.58, a median score of 9.21, a standard deviation of 3.22, and a standard error of the mean of 0.67. Approximately 45.82 per cent of the normal pupils scored above the mean, while 25.00 per cent of them scored below the mean, and 29.16 per cent of the normal pupils scored within the mean class-interval. The mean score of 9.58 indicated a grade-placement of 6.0 which is below the norm of expectancy.

TABLE 63

DISTRIBUTION OF THE RAW SCORES ON THE GENERAL VOCABULARY COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
16 - 17	1	4.17	0	0.00	1	2.17
14 - 15	2	8.33	1	4.54	3	6.52
12 - 13	4	16.66	1	4.54	5	10.87
10 - 11	4	16.66	1	4.54	5	10.87
8 - 9	7	29.16	5	22.72	12	26.09
6 - 7	3	12.50	7	31.82	10	21.73
4 - 5	3	15.50	5	22.72	8	17.39
2 - 3	0	0.00	2	9.09	2	4.34
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.98	22	99.97	46	99.98
Mean		9.58		6.45		
Median		9.21		6.64		
Sigma		3.22		2.88		
$Sigma_m$		0.67		0.61		
G. P.		6.0		5.0		

Retarded Group.-- The data on the General Vocabulary component for the retarded pupils indicated a range from a low of 2 to a high of 15, with a mean score of 6.45, a median score of 6.64, a standard deviation of 2.88, and a standard error of the mean of 0.61. Approximately 36.34 per cent of the retarded pupils scored above the mean, while 31.81 per cent

TABLE 64

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (GENERAL VOCABULARY) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	9.58	3.22	0.67			
and					0.90	3.13	3.47
Retarded	22	6.45	2.88	0.61			

of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 6.45 indicated a grade-placement of 5.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 64, page 131, for the normal pupils the mean was 9.58, for the retarded pupils 6.45, with a difference of 3.13 in favor of the normal pupils. The median score for the normal pupils was 9.21 and for the retarded pupils it was 6.64, with a difference of 2.57 in favor of the normal pupils. The standard deviation for the normal pupils was 3.22 and for the retarded pupils it was 2.88, with a difference of .34 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.67 and for the retarded pupils it was 0.61, with a difference of .06 in favor of the normal pupils. The grade-placements were 6.0 and 5.0 for the normal and retarded groups, respectively, to show a difference of 1.0 in favor of the normal pupils.

The "t" value for data on the two groups was 3.47. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "General Vocabulary" was statistically significant.

Results on the California Achievement Test (Total Reading Vocabulary).-- The data on the "Total Reading Vocabulary" component for the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 65, page 133, and Figure 11, page 134, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Reading Vocabulary component for the normally progressing pupils indicated a range from a low of 15 to a high of 64, with a mean score of 39.71, a median score of 36.64, a standard deviation of 8.90, a standard error of the mean of 1.85. Approximately 25.00 per cent of the normally progressing pupils scored above the mean, while 54.16 per cent of them scored below the mean, and 20.83 per cent of the normally progressing pupils scored within the mean class-interval. The mean score of 39.71 indicated a grade-placement of 6.1, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Reading Vocabulary component for the retarded pupils indicated a range from a low of 10 to a high of fifty-four, with a mean score of 29.95, a median score of 29.5, a standard deviation of 10.10, and a standard error of the mean of 2.20. Approximately 22.71 per cent of the retarded pupils scored above the mean, while 54.54 per cent of them scored below the mean, and 22.72 per cent of the retarded pupils scored within the mean class-interval. The

TABLE 65

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL READING VOCABULARY COMPONENT CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
60 - 64	1	4.17	0	0.00	1	2.17
55 - 59	3	12.50	0	0.00	3	6.52
50 - 54	0	0.00	1	4.54	1	2.17
45 - 49	2	8.33	2	9.09	4	8.69
40 - 44	5	20.83	1	4.54	6	13.04
35 - 39	4	16.66	1	4.54	5	10.87
30 - 34	7	29.16	5	22.72	12	26.09
25 - 29	1	4.17	7	31.82	8	17.39
20 - 24	0	0.00	1	4.54	1	2.17
15 - 19	1	4.17	3	13.64	4	8.69
10 - 14	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.97	46	99.97
Mean		39.71		29.95		
Median		36.64		29.5		
Sigma		8.90		10.10		
Sigma $_m$		1.85		2.20		
G. P.		6.1		5.2		

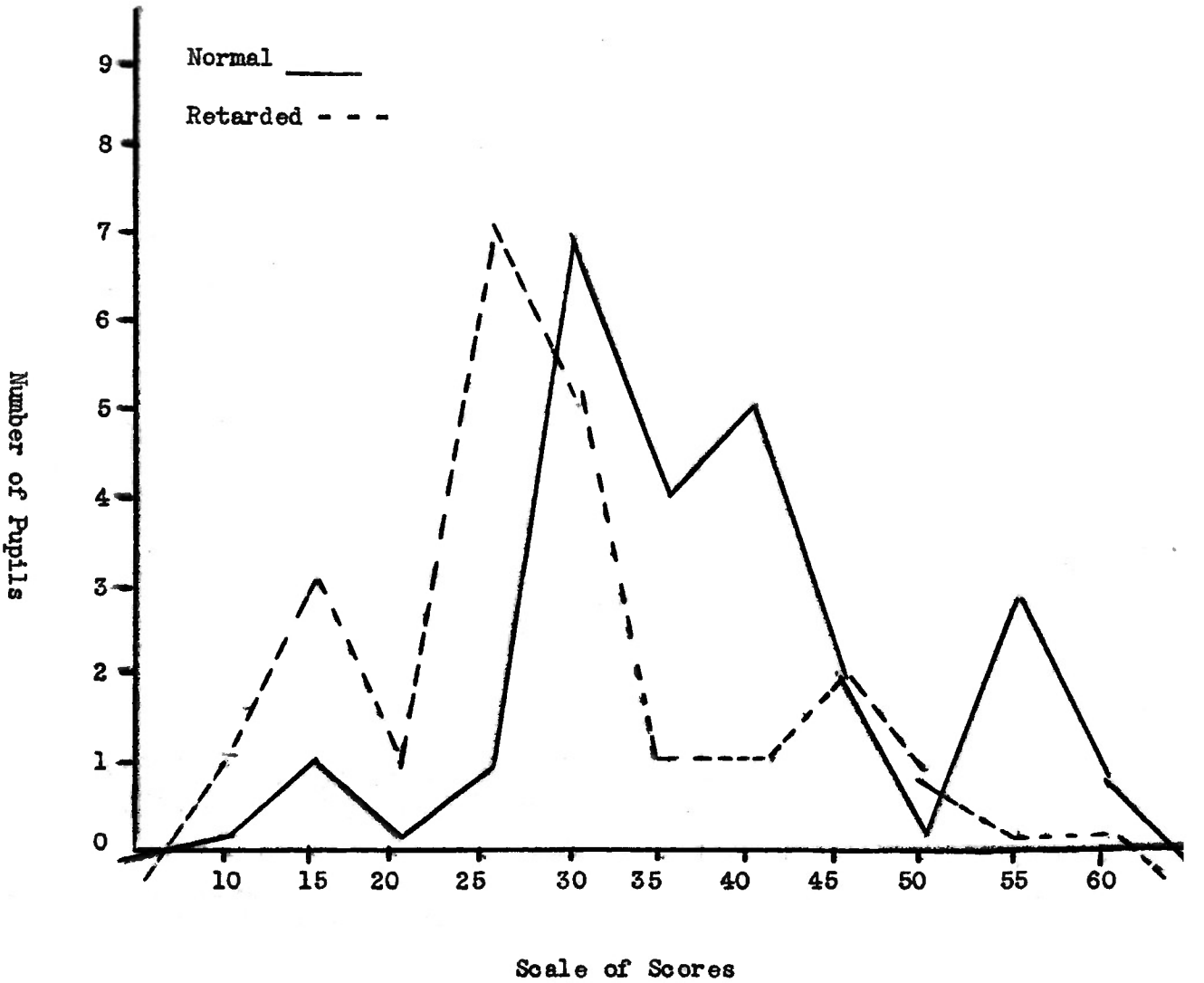

Fig. 11.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Reading Vocabulary) California Achievement Test.

TABLE 66

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (TOTAL READING VOCABULARY) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	39.71	8.90	1.85			
and					2.88	9.76	3.38
Retarded	22	29.95	10.00	2.20			

mean score of 29.95 indicated a grade-placement of 5.2, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 66, page 135, for the normal pupils the mean was 39.71, for the retarded pupils it was 29.95, with a difference of 9.76 in favor of the normal pupils. The median for the normal pupils was 36.64 and for the retarded pupils it was 29.5, with a difference of 7.14 in favor of the normal pupils. The standard deviation for the normal pupils 8.90 and for the retarded pupils it was 10.10, with a difference of 1.20 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 1.85 and for the retarded pupils it was 2.20, with a difference of .35 in favor of the retarded pupils. The grade-placements were 6.1 and 5.2 for the normal and retarded groups, respectively, to show a difference of 1.1 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 3.38. This "t" was

significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the groups of normally progressing pupils and the educationally retarded pupils on the component of the "Total Reading Vocabulary" was statistically significant.

Results on the California Achievement Test (Following Directions).-- The data on the "Following Directions" component of the California Achievement Test as revealed by the scores obtained by the two groups, and as presented in Table 67, page 137, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Following Directions component for the normally progressing pupils indicated a range from a low of 2 to a high of 9, with a mean score of 4.33, a median score of 4.23, a standard deviation of 1.72, and a standard error of the mean of 0.36. Approximately 20.83 per cent of the normally progressing pupils scored above the mean, while 33.33 per cent of them scored below the mean, and 45.83 per cent of the normal pupils scored within the mean class-interval. The mean score of 4.33 indicated a grade-placement of 5.9, which is below the norm of expectancy.

Retarded Group.-- The data on the Following Directions component for the retarded pupils indicated a range from a low of 0 to a high of 9, with a mean score of 3.77, a median score of 3.3, a standard deviation of 1.02, and a standard error of the mean of 0.22. Approximately 22.72 per cent of the retarded pupils scored above the mean, while 54.54 per cent of them scored below the mean, and 22.72 per cent of the retarded pupils scored within the mean class-interval. The mean score of 3.3

TABLE 67

DISTRIBUTION OF THE RAW SCORES ON THE FOLLOWING DIRECTIONS COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	0	0.00	0	0.00	0	0.00
10 - 11	0	0.00	0	0.00	0	0.00
8 - 9	1	4.17	1	4.54	2	4.34
6 - 7	4	16.66	4	18.18	8	17.39
4 - 5	11	45.83	5	22.72	16	34.78
2 - 3	8	33.33	10	45.45	18	39.13
0 - 1	0	0.00	2	9.09	2	4.34
Total	24	99.99	22	99.98	46	99.98
Mean		4.33		3.77		
Median		4.23		3.3		
Sigma		1.72		1.02		
$Sigma_m$		0.36		0.22		
G. P.		5.9		5.5		

indicated a grade-placement of 5.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 68, page 138, for the normal pupils the mean was 4.33, for the retarded pupils 3.77, with a difference of 0.56 in favor of the normal pupils. The median for the normal pupils was 4.23 and for the retarded pupils it was 3.3 with a difference of 0.93 in favor of the normal pupils. The standard deviation for the normal pupils was 1.72 and for the retarded pupils it was 1.02,

TABLE 68

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (FOLLOWING DIRECTIONS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	4.23	1.72	0.36			
and					0.42	0.56	1.33
Retarded	22	3.77	1.02	0.22			

with a difference of .70 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.36 and for the retarded pupils it was 0.22, with a difference of .14 in favor of the normal pupils. The grade-placements were 5.9 and 5.5 for the normal and retarded groups, respectively, to show a difference of 0.4 in favor of the normally progressing pupils.

The "t" value for the data on the two groups was 1.33. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Following Directions" was not statistically significant.

Results on the California Achievement Test (Reference Skills).--The data on the "Reference Skills" component for California Achievement Test as revealed by the scores obtained by the two groups, and as presented in Table 69, page 139, are found in the separate paragraphs to follow.

TABLE 69

DISTRIBUTION OF THE RAW SCORES ON THE REFERENCE SKILLS COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	1	4.17	0	0.00	1	2.17
10 - 11	3	12.50	1	4.54	4	8.69
8 - 9	3	12.50	1	4.54	4	8.69
6 - 5	9	37.50	5	22.72	14	30.43
4 - 5	5	20.83	6	27.27	11	23.91
2 - 3	3	12.50	4	18.18	7	15.22
0 - 1	0	0.00	5	22.72	5	10.87
Total	24	100.00	22	99.97	46	99.98
Mean		6.58		4.14		
Median		6.28		4.7		
Sigma		2.62		2.72		
$Sigma_m$		0.54		0.58		
G. P.		5.8		4.3		

Normal Group.-- The data on the Reference Skills component for the normally progressing pupils indicated a range from a low of 2 to a high of 13, with a mean score of 6.58, a median score of 6.28, a standard deviation of 2.62, and a standard error of the mean of 0.54. Approximately 29.17 per cent of the normal pupils scored above the mean, while 33.33 per cent of them scored below the mean, and 37.50 per cent of the normal pupils scored within the mean class-interval. The mean score of 6.58

TABLE 70

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (REFERENCE SKILLS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	6.58	2.62	0.54			
and					0.80	2.44	3.05
Retarded	22	4.14	2.72	0.58			

indicated a grade-placement of 5.8, which is below the norm of expectancy.

Retarded Group.-- The data on the Reference Skills component for the retarded pupils indicated a range from a low of 0 to a high of 11, with a mean score of 4.14, a median score of 4.7, a standard deviation of 2.72, and a standard error of the mean of 0.58. Approximately 31.80 per cent of the retarded pupils scored above the mean, while 40.90 per cent of them scored below the mean, and 27.27 per cent of the retarded pupils scored within the mean class-interval. The mean score of 4.14 indicated a grade-placement of 4.3, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 70, page 140, for the normal pupils the mean was 6.58, for the retarded pupils 4.14, with a difference of 2.44 in favor of the normal pupils. The median for the normal pupils was 6.28 and for the retarded pupils it was 4.7, with a difference of 1.58 in favor of the normal pupils. The standard deviation for the normal pupils was 2.62 and for the retarded pupils it was

2.72, with a difference of .10 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.54 and for the retarded pupils it eas 0.58, with a difference of .04 in favor of the retarded pupils. The grade-placements were 5.8 and 4.3 for the normal and retarded groups, respectively, to show a difference of 1.5 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.67. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Reference Skills" was statistically significant.

Results on the California Achievement Test (Interpretation Skills).-- The data on the "Interpretation Skills" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 71, page 142, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Interpretation Skills component for the normally progressing pupils indicated a range from a low of 4 to a high of 17, with a mean score of 11.42, a median score of 11.5, a standard deviation of 3.46, and a standard error of the mean of 0.72. Approximately 49.99 per cent of the normal pupils scored above the mean, while 25.00 per cent of them scored below the mean, and 25.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 11.42 indicated a grade-placement of 5.8, which is below the norm of expectancy.

Retarded Group.-- The data on the Interpretation Skills component

TABLE 71

DISTRIBUTION OF THE RAW SCORES ON THE INTERPRETATION SKILLS COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
16 - 17	3	12.50	2	9.09	5	10.87
14 - 15	5	20.83	0	0.00	5	10.87
12 - 13	4	16.66	2	9.09	6	13.04
10 - 11	6	25.00	4	18.18	10	21.73
8 - 9	1	4.17	7	31.82	8	17.39
6 - 7	4	16.66	5	22.72	9	19.56
4 - 5	1	4.17	1	4.54	2	4.34
2 - 3	0	0.00	1	4.54	1	2.17
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	26	99.98	46	99.97
Mean		11.42		9.04		
Median		11.5		8.64		
Sigma		3.46		3.42		
$Sigma_m$		0.72		0.74		
G. P.		5.8		5.0		

for the retarded pupils indicated a range from a low of 2 to a high of seventeen, with a mean score of 9.04, a median score of 8.64, a standard deviation of 3.42 and a standard error of the mean of 0.74. Approximately 36.36 per cent of the retarded pupils scored above the mean, while

TABLE 72

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (INTERPRETATION SKILLS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	11.42	3.46	0.72			
and					1.03	2.38	2.31
Retarded	22	9.04	3.42	0.74			

31.80 per cent of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 9.04 indicated a grade-placement of 5.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 72, page 143, for the normal pupils the mean was 11.42, for the retarded pupils it was 9.04, with a difference of 2.38 in favor of the normal pupils. The median for the normal pupils was 11.5 and for the retarded pupils it was 8.64, with a difference of 2.86 in favof of the normal pupils. The standard deviation for the normal pupils was 3.46 and for the retarded pupils it was 3.42, with a difference of .04 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.72 and for the retarded pupils it was 0.74, with a difference of .02 in favor of the retarded pupils. The grade-placements were 5.8 and 5.0 for the normal and retarded groups, respectively, to show a difference of 0.8 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.31. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component "Interpretation Skills" was not statistically significant.

Results on the California Achievement Test (Total Reading Comprehension).--The data on the Total Reading Comprehension as revealed by the scores obtained by the two groups of pupils, and as presented in Table 73, page 145, and Figure 12, page 146, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Reading Comprehension component for the normally progressing pupils indicated a range from a low of 9 to a high of 39, with a mean score of 22.5, a median score of 20.5, a standard deviation of 6.63, and a standard error of the mean of 1.38. Approximately 37.49 per cent of the normal pupils scored above the mean, while 50.00 per cent of them scored below the mean, and 12.50 per cent of the normal pupils scored within the mean class-interval. The mean score of 22.5 indicated a grade-placement of 4.8, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Reading Comprehension component for the retarded pupils indicated a range from a low of 9 to a high of 29, with a mean score of 17.09, a median score of 14.93, a standard deviation of 4.32, and a standard error of the mean of 0.94. Approximately 31.81 per cent of the retarded pupils scored above the mean, while 45.46 per cent of them scored below the mean, and 22.72 per

TABLE 73

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL READING COMPREHENSION COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
36 - 39	1	4.17	0	0.00	1	2.17
33 - 35	2	8.33	0	0.00	2	4.34
30 - 32	2	8.33	0	0.00	2	4.34
27 - 29	0	0.00	3	13.64	3	6.52
24 - 23	4	16.66	1	4.54	5	10.87
21 - 23	3	12.50	1	4.54	4	8.69
18 - 20	8	33.33	2	9.09	10	21.73
15 - 17	2	8.33	5	22.72	7	15.22
12 - 14	1	4.17	7	31.82	8	17.39
9 - 11	1	4.17	3	13.64	4	8.69
Total	24	99.99	22	99.99	46	99.97
Mean		22.5		17.09		
Median		20.5		14.93		
Sigma		6.63		4.32		
Sigma $_m$		1.38		0.94		
G. P.		4.8		3.5		

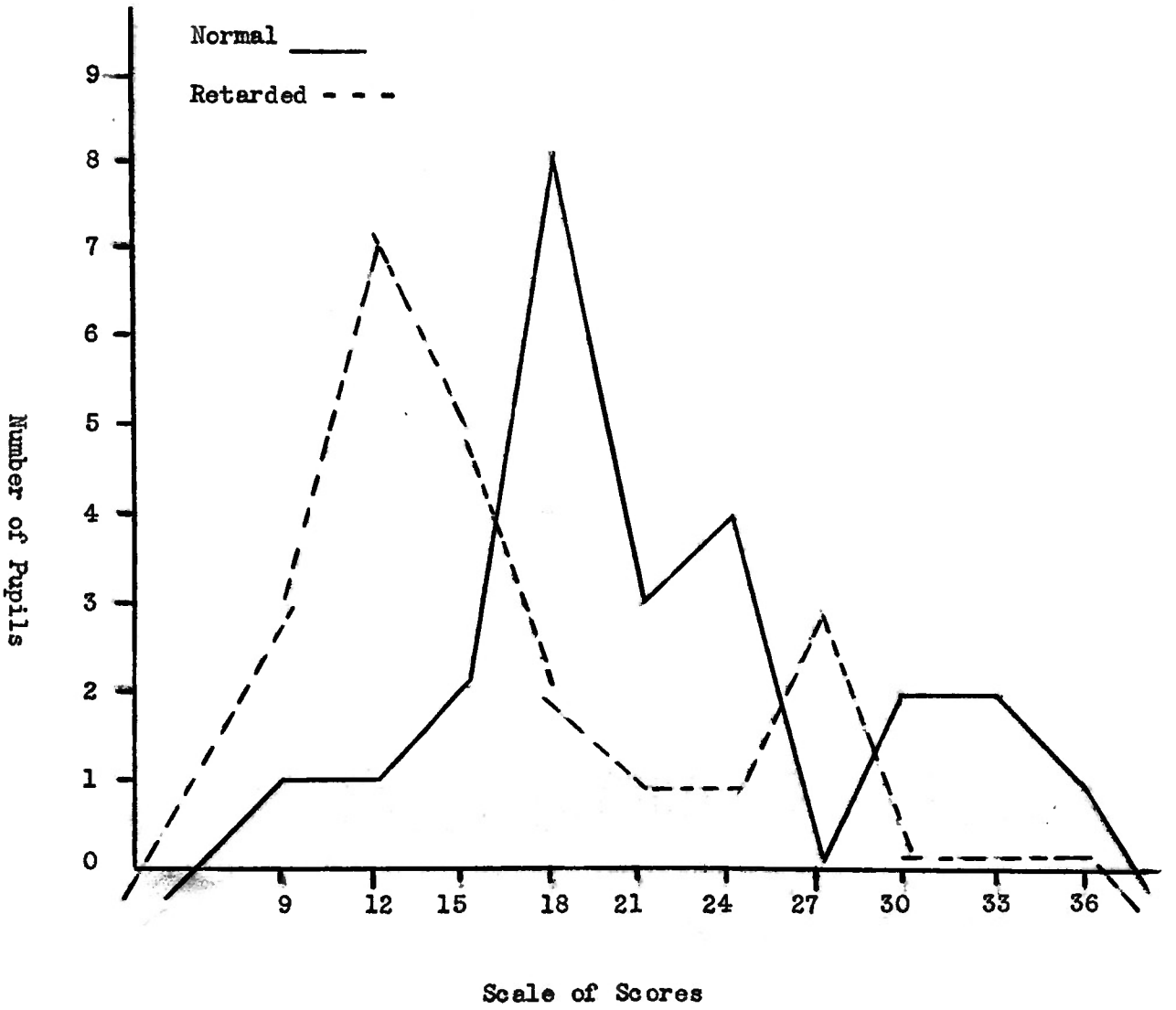

Fig. 12.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Reading Comprehension) California Achievement Test.

TABLE 74

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (TOTAL READING COMPREHENSION) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	22.5	6.63	1.38			
and					1.67	5.41	3.24
Retarded	22	17.09	4.32	0.94			

cent of the retarded pupils scored within the mean class-interval. The mean score of 17.09 indicated a grade-placment of 3.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 74, page 147, for the normal pupils the mean was 22.5, for the retarded pupils 17.09, with a difference of 5.41 in favor of the normal pupils. The median for the normal pupils was 20.5 and for the retarded pupils it was 14.93, with a difference of 5.57 in favor of the normal pupils. The standard deviation for the normal pupils was 6.63 and for the retarded pupils it was 4.32, with a difference of 2.31 in favor of the normal pupils. The standard error of the mean for the normal pupils was 1.38 and for the retarded pupils it was 0.94, with a difference of .44 in favor of the normal pupils. The grade-placements were 4.8 and 3.5 for the normal and retarded groups, respectively, to show a difference of 1.3 in favor of the normally progressing pupils.

TABLE 75

DISTRIBUTION OF THE RAW SCORES ON THE NUMBER CONCEPT COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	1	4.17	0	0.00	1	2.17
10 - 11	1	4.17	0	0.00	1	2.17
8 - 9	12	50.00	1	4.54	13	28.26
6 - 7	8	33.33	7	31.82	15	32.62
4 - 5	2	8.33	9	40.91	11	23.91
2 - 3	0	0.00	5	22.72	5	10.87
Total	24	100.00	22	99.99	46	100.00
Mean		7.75		4.86		
Median		7.83		4.83		
Sigma		1.7		1.66		
$Sigma_m$		0.35		0.36		
G. P.		6.0		5.0		

The "t" value for data on the two groups was 3.24. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Reading Comprehension" was statistically significant.

Results on the California Achievement Test (Number Concept).--The data on the "Number Concept" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as

presented in Table 75, page 148, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Number Concept component for the normally progressing pupils indicated a range from a low of 4 to a high of 13, with a mean score of 7.75, a median score of 7.83, a standard deviation of 1.7, and a standard error of the mean of 0.37. Approximately 8.34 per cent of the normal pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 50.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 7.75 indicated a grade-placement of 6.0, which is below the norm of expectancy.

Retarded Group.-- The data on the Number Concept component for the retarded pupils indicated a range from a low of 2 to a high of 9, with a mean score of 4.86, a median score of 4.83, a standard deviation of 1.66, and a standard error of the mean of 0.36. Approximately 36.36 per cent of the retarded pupils scored above the mean, while 22.72 per cent of them scored below the mean and 40.91 per cent of the retarded pupils scored within the mean class-interval. The mean score of 4.86 indicated a grade-placement of 5.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 76, page 150, for the normal pupils the mean was 7.75, for the retarded pupils it was 4.86, with a difference of 2.89 in favor of the normal pupils. The median for the normal pupils was 7.83 and for the retarded pupils it was 4.83, with a difference of 3.0 in favor of the normal pupils. The standard deviation for the normal pupils was 1.7 and for the retarded pupils it was 1.66, with a difference of .04 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.35 and for the

TABLE 76

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (NUMBER CONCEPT) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	7.75	1.7	0.35			
and					0.51	2.89	5.66
Retarded	22	4.86	1.66	0.36			

retarded pupils it was 0.36, with a difference of .01 in favor of the normal pupils. The grade-placements were 6.0 and 5.0 for the normal and retarded groups, respectively, to show a difference of 1.0 in favor of the normal pupils.

The "t" value for data on the two groups was 5.66. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the educationally retarded pupils on the component of "Number Concept" was statistically significant.

Results on the California Achievement Test (Symbols and Rules).-- The data on the "Smybols and Rules" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 77, page 151, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Symbols and Rules component for the

TABLE 77

DISTRIBUTION OF THE RAW SCORES ON THE SYMBOLS AND RULES COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
10 - 11	0	0.00	0	0.00	0	0.00
8 - 9	1	4.17	1	4.54	2	4.34
6 - 7	5	20.83	4	18.18	9	19.56
4 - 5	13	54.16	7	31.82	20	43.47
2 - 3	5	20.83	8	36.36	13	28.26
0 - 1	0	0.00	2	9.09	2	4.34
Total	24	99.99	22	99.99	46	99.97
Mean		4.63		3.95		
Median		4.58		3.75		
Sigma		1.5		2.02		
Sigma_m		0.31		0.44		
G. P.		6.8		6.5		

normally progressing pupils indicated a range from a low of 2 to a high of 9, with a mean score of 4.63, a median score of 4.58, a standard deviation of 1.5, and a standard error of the mean of 0.31. Approximately 25.00 per cent of the normal pupils scored above the mean, while 20.83 per cent of them scored below the mean, and 54.16 per cent of the normal pupils scored within the mean class-interval. The mean score of 4.63 indicated a grade-placement of 6.8, which is below the norm of expectancy.

Retarded Group.-- The data on the Symbols and Rules component for

TABLE 78

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (SYMBOLS AND RULES) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	4.63	1.5	0.31			
and					0.53	0.68	1.28
Retarded	22	3.95	2.02	0.44			

the retarded pupils indicated a range from a low of 0 to a high of 9, with a mean score of 3.95, a median score of 3.75, a standard deviation of 2.02 and a standard error of the mean of 0.44. Approximately 22.72 per cent of the retarded pupils scored above the mean, while 45.45 per cent of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 3.95 indicated a grade-placement of 6.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 78, page 152, for the normal pupils the mean was 4.63, for the retarded pupils it was 3.95, with a difference of 0.68 in favor of the normal pupils. The median for the normal pupils was 4.58 and for the retarded pupils it was 3.75, with a difference of 0.83 in favor of the normal pupils. The standard deviation for the normal pupils was 1.5 and for the retarded pupils it eas 2.02, with a difference of .52 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.31 and for

the retarded pupils it was 0.44, with a difference of .13 in favor of the retarded pupils. The grade-placements were 6.8 and 6.5 for the normal and retarded groups, respectively, to show a difference of 0.3 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 1.28. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Symbols and Rules" was not statistically significant.

Results on the California Achievement Test (Numbers and Equations).-- The data on the "Numbers and Equations" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 79, page 154, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Numbers and Equations component for the normally progressing pupils indicated a range from a low of 0 to a high of 7, with a mean score of 3.17, a median score of 3.17, a standard deviation of 1.30 and a standard error of the mean of 0.27. Approximately 41.67 per cent of the normally progressing pupils scored above the mean, while 8.33 per cent of them scored below the mean, and 50.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 3.17 indicated a grade-placement of 7.8, which is at the norm of expectancy.

Retarded Group.-- The data on the Numbers and Equations component for the retarded pupils indicated a range from a low of 0 to a high of 7, with a mean score of 3.32, a median score of 2.95, a standard deviation

TABLE 79

DISTRIBUTION OF THE RAW SCORES ON THE NUMBERS AND EQUATIONS COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
8 - 9	0	0.00	0	0.00	0	0.00
6 - 7	1	4.17	4	18.18	5	10.87
4 - 5	9	37.50	4	18.18	13	28.26
2 - 3	12	50.00	11	50.00	23	50.00
0 - 1	2	8.33	3	13.64	5	10.87
Total	24	100.00	22	100.00	46	100.00
Mean		3.17		3.32		
Median		3.17		2.95		
Sigma		1.30		1.86		
$Sigma_m$		0.27		0.41		
G. P.		7.8		7.9		

of 1.86, and a standard error of the mean of 0.41. Approximately 36.36 per cent of the retarded pupils scored above the mean, while 13.64 per cent of them scored below the mean, and 50.00 per cent of the retarded pupils scored within the mean class-interval.

Comparative Data and "t" Ratio.-- As indicated in Table 80, page 155, for the normal pupils the mean was 3.17, for the retarded pupils 3.32, with a difference of 0.15 in favor of the retarded pupils. The median for the normal pupils was 3.17 and for the retarded pupils it was 2.95, with a difference of 0.22 in favor of the normal pupils. The standard

TABLE 80

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (NUMBERS AND EQUATIONS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	3.17	1.30	0.27			
and					0.49	0.15	0.30
Retarded	22	3.32	1.86	0.41			

deviation for the normal pupils was 1.30 and for the retarded pupils it was 1.86, with a difference of .56 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.27 and for the retarded pupils it was 0.41, with a difference of .14 in favor of the retarded pupils. The grade-placements were 7.8 and 7.9 for the normal and retarded groups, respectively, to show a difference of 0.1 in favor of the retarded pupils.

The "t" value for data on the two groups was 0.30. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the normally progressing pupils and the group of educationally retarded pupils on the component "Numbers and Equations" was not statistically significant.

Results on the California Achievement Test (Problems).--The data on the "Problems" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in

TABLE 81

DISTRIBUTION OF THE RAW SCORES ON THE PROBLEMS COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	1	4.17	0	0.00	1	2.17
10 - 11	2	8.33	0	0.00	2	4.34
8 - 9	1	4.17	0	0.00	1	2.17
6 - 7	4	16.66	2	9.09	6	13.04
4 - 5	8	33.33	7	31.82	15	32.62
2 - 3	7	29.16	9	40.91	16	34.78
0 - 1	1	4.17	4	18.18	5	10.87
Total	24	99.99	22	100.00	46	99.99
Mean		5.08		3.14		
Median		4.5		3.06		
Sigma		2.9		1.74		
$Sigma_m$		0.60		0.38		
G. P.		7.0		6.0		

Table 81, page 156, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Problems component for the normally progressing pupils indicated a range from a low of 0 to a high of 13, with a mean score of 5.08, a median score of 4.5, a standard deviation of 2.9, and a standard error of the mean of 0.60. Approximately 33.33 per cent of the normal pupils scored above the mean, while 33.33 per cent of them scored below the mean, and 33.33 per cent of the normal pupils

TABLE 82

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (PROBLEMS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	5.08	2.9	0.60			
and					0.71	1.94	2.73
Retarded	22	3.14	1.74	0.38			

scored within the mean class-interval. The mean score of 5.08 indicated a grade-placement of 7.0, which is at the norm of expectancy.

Retarded Group.-- The data on the Problems component for the retarded pupils indicated a range from a low of 0 to a high of 7, with a mean score of 3.14, a median of 3.06, a standard deviation of 1.74, and a standard error of the mean of 0.38. Approxiamtely 40.91 per cent of the retarded pupils scored above the mean, while 18.18 per cent of them scored below the mean, and 40.91 per cent of the retarded pupils scored within the mean class-interval. The mean score of 3.14 indicated a grade-placement of 6.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 82, page 157, for the normal pupils the mean was 5.08, for the retarded pupils 3.14, with a difference of 1.94 in favor of the normal pupils. The median for the normal pupils was 4.5 and for the retarded pupils it was 3.06, with a difference of 1.44 in favor of the normal pupils. The standard deviation for the normal pupils was 2.9 and for the retarded pupils it was

1.74, with a difference of 1.16 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.60 and for the retarded pupils it was 0.38, with a difference of .28 in favor of the normal pupils. The grade-placements were 7.0 and 6.0 for the normal and retarded groups, respectively, to show a difference of 1.0 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.73. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Problems" was statistically significant.

Results on the California Achievement Test (Total Arithmetic Reasoning).--The data on the "Total Arithmetic Reasoning" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 83, page 159, and Figure 13, page 160, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Arithmetic Reasoning component for the normally progressing pupils indicated a range in scores from a low of 12 to a high of 39, with a mean score of 20.63, a median score of 19.64, a standard deviation of 5.28, and a standard error of the mean of 1.1. Approximately 41.67 per cent of the normal pupils scored above the mean, while 29.16 per cent of them scored below the mean, and 29.16 per cent of the normal pupils scored within the mean class-interval. The mean score of 20.63 indicated a grade-placement of 6.8, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Arithmetic Reasoning

TABLE 83

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL ARITHMETIC REASONING COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
36 - 39	1	4.17	0	0.00	1	2.17
33 - 35	0	0.00	0	0.00	0	0.00
30 - 32	0	0.00	0	0.00	0	0.00
27 - 29	1	0.00	0	0.00	1	2.17
24 - 26	5	20.83	2	9.09	7	15.22
21 - 23	3	12.50	1	4.54	4	8.69
18 - 20	7	29.16	5	22.72	12	26.09
15 - 17	5	20.83	7	31.82	12	26.09
12 - 14	2	8.33	2	9.09	4	8.69
9 - 11	0	0.00	5	22.72	5	10.87
Total	24	99.99	22	99.98	46	99.99
Mean		20.63		16.14		
Median		19.64		16.21		
Sigma		5.28		2.4		
$Sigma_m$		1.1		0.52		
G. P.		6.8		6.3		

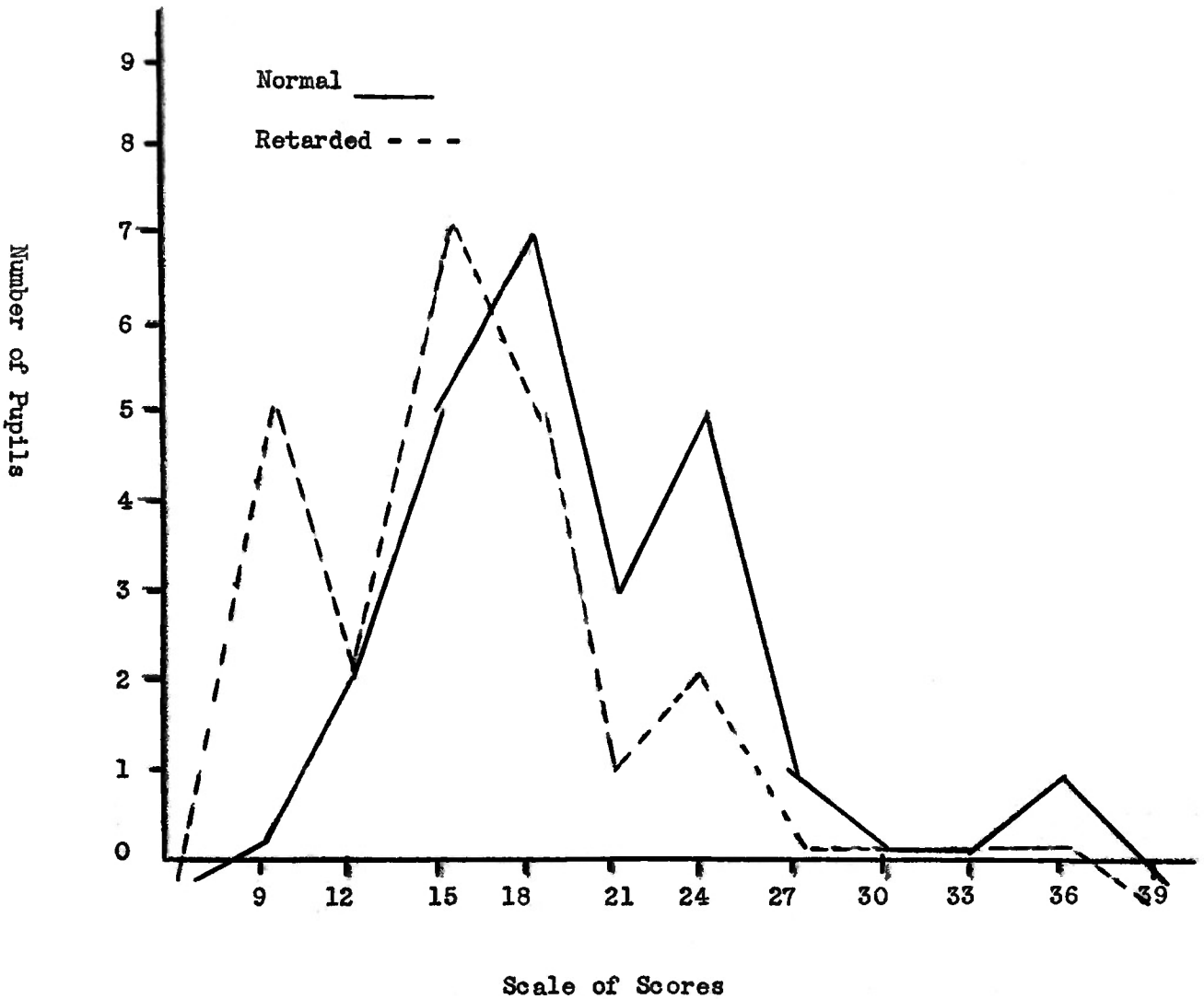

Fig. 13.- Frequency polygon of scores made by twenty-four normal and twenty-two retarded pupils on (Total Arithmetic Reasoning) California Achievement Test.

TABLE 84

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (TOTAL ARITHMETIC REASONING) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	20.63	5.28	1.1			
and					1.22	4.49	3.68
Retarded	22	16.14	2.4	0.52			

component for the retarded pupils indicated a range from a low of 9 to a high of 26, with a mean score of 16.14, a median score of 16.21, a standard deviation of 2.4, and a standard error of the mean of 0.52. Approximately 36.35 per cent of the retarded pupils scored above the mean, while 31.81 per cent of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 16.14 indicated a grade-placement of 6.3, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 84, page 161, for the normal pupils the mean was 20.63, for the retarded pupils 16.14, with a difference of 4.49 in favor of the normal pupils. The median score for the normal pupils was 19.64 and for the retarded pupils it was 16.21, with a difference of 3.43 in favor of the normal pupils. The standard deviation for the normal pupils was 5.28 and for the retarded pupils it was 2.4, with a difference of 2.88 in favor of the normal

pupils. The standard error of the mean for the normal pupils was 1.1 and for the retarded pupils it was 0.52, with a difference of .58 in favor of the normal pupils. The grade-placements were 6.8 and 6.3 for the normal and retarded groups, respectively, to show a difference of 0.5 in favor of the normal pupils.

The "t" value for data on the two groups was 3.68. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Arithmetic Reasoning" was statistically significant.

Results on the California Achievement Test (Addition).--The data on the "Addition" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 85, page 163, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Addition component for the normal pupils indicated a range from a low of 6 to a high of 15, with a mean score of 10.58, a median score of 10.67, a standard deviation of 1.66 and a standard error of the mean of 0.34. Approximately 29.17 per cent of the normal pupils scored above the mean, while 20.83 per cent of them scored below the mean, and 50.00 per cent of the normal pupils scored within the mean class-interval. The mean score of 10.58 indicated a grade-placement of 6.4, which is below the norm of expectancy.

Retarded Group.-- The data on the Addition component for the retarded pupils indicated a range from a low of 0 to a high of 15, with a mean score of 7.86, a median score of 7.5, a standard deviation of 2.78, and a standard error of the mean of 0.61. Approximately 27.26 per cent

TABLE 85

DISTRIBUTION OF THE RAW SCORES ON THE ADDITION COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
14 - 15	1	4.17	1	4.54	2	4.34
12 - 13	6	25.00	1	4.54	7	15.22
10 - 11	12	50.00	4	18.18	16	34.78
8 - 9	3	12.50	5	22.72	8	17.39
6 - 7	2	8.33	7	31.82	9	19.56
4 - 5	0	0.00	3	13.64	3	6.52
2 - 3	0	0.00	1	4.54	1	2.17
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	100.00	22	99.98	46	99.98
Mean		10.58		7.86		
Median		10.67		7.5		
Sigma		1.66		2.78		
$Sigma_m$		0.34		0.61		
G. P.		6.4		5.3		

of the retarded pupils scored above the mean, while 50.00 per cent of them scored below the mean, and 22.72 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.86 indicated a grade-placement of 5.3, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 86, page 164, for the normal pupils the mean was 10.58, for the retarded pupils 7.86,

TABLE 86

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (ADDITION) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	10.58	1.66	0.34			
and					0.70	2.72	3.88
Retarded	22	7.86	2.78	0.61			

with a difference of 2.72 in favor of the normal pupils. The median for the normal pupils was 10.67 and for the retarded pupils it was 7.5, with a difference of 3.17 in favor of the normal pupils. The standard deviation for the normal pupils was 1.66 and for the retarded pupils it was 2.78, with a difference of 1.12 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.32 and for the retarded pupils it was 0.61, with a difference of .29 in favor of the retarded pupils. The grade-placements were 6.5 and 5.3 for the normal and retarded groups, respectively, to show a difference of 1.1 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 3.88. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Addition" was statistically significant.

TABLE 87

DISTRIBUTION OF THE RAW SCORES ON THE SUBTRACTION COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	1	4.17	0	0.00	1	2.17
10 - 11	8	33.33	2	9.09	10	21.73
8 - 9	9	37.50	4	18.18	13	28.26
6 - 7	6	25.00	9	40.91	15	32.62
4 - 5	0	0.00	3	13.64	3	6.52
2 - 3	0	0.00	4	18.18	4	8.69
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	100.00	22	100.00	46	99.99
Mean		8.83		6.23		
Median		8.83		6.39		
Sigma		1.68		2.34		
$Sigma_m$		0.35		0.51		
G. P.		6.0		5.3		

Results on the California Achievement Test (Subtraction).--The data on the "Subtraction" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 87, page 165, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Subtraction component for the normally progressing pupils indicated a range from a low of 6 to a high

of 13, with a mean score of 8.83, a median score of 8.83, a standard deviation of 1.68, and a standard error of the mean of 0.35. Approximately 37.50 per cent of the normal pupils scored above the mean, while 25.00 per cent of them scored below the mean, and 37.50 per cent of the normal pupils scored within the mean class-interval. The mean score of 8.83 indicated a grade-placement of 6.0, which is below the norm of expectancy.

Retarded Group.-- The data on the Subtraction component for the retarded pupils indicated a range from a low of 2 to a high of 11, with a mean score of 6.23, a median score of 6.39, a standard deviation of 2.34, and a standard error of the mean of 0.51. Approximately 27.27 per cent of the retarded pupils scored above the mean, while 31.82 per cent of them scored below the mean, and 40.91 per cent of the retarded pupils scored within the mean class-interval. The mean score of 6.23 indicated a grade-placement of 5.3, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 88, page 167, for the normal pupils the mean was 8.83, for the retarded pupils 6.23, with a difference of 2.60 in favor of the normal pupils. The median for the normal pupils was 8.83 and for the retarded pupils it was 6.39, with a difference of 2.44 in favor of the normal pupils. The standard deviation for the normal pupils was 1.68 and for the retarded pupils it was 2.34, with a difference of .66 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.35 and for the retarded pupils it was 0.51, with a difference of .16 in favor of the retarded pupils. The grade-placements were 6.0 and 5.3 for the normal and retarded groups, respectively, to show a difference of 0.7 in favor of the normally progressing pupils.

TABLE 88

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (SUBTRACTION) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	8.83	1.68	0.35			
and					0.62	2.60	4.19
Retarded	22	6.23	2.34	0.51			

The "t" value for data on the two groups was 4.19. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Subtraction" was statistically significant.

Results on the California Achievement Test (Multiplication).--The data on the "Multiplication" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 89. page 168, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Multiplication component for the normally progressing pupils indicated a range from a low of 2 to a high of 15, with a mean score of 8.83, a median score of 8.95, a standard deviation of 2.98, and a standard error of the mean of 0.62. Approximately 37.50 per cent of the normally progressing pupils scored above the mean,

TABLE 89

DISTRIBUTION OF THE RAW SCORES ON THE MULTIPLICATION COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
14 - 15	1	4.17	1	4.54	2	4.34
12 - 13	3	12.50	1	4.54	4	8.69
10 - 11	5	20.83	1	4.54	6	13.04
8 - 9	11	45.83	5	22.72	16	34.78
6 - 7	1	4.17	9	40.91	10	21.73
4 - 5	0	0.00	3	13.64	3	6.52
2 - 3	3	12.50	1	4.54	4	8.69
0 - 1	0	0.00	1	4.54	1	2.17
Total	24	100.00	22	99.97	46	99.96
Mean		8.83		7.14		
Median		8.95		6.83		
Sigma		2.98		2.94		
$Sigma_m$		0.62		0.64		
G. P.		6.3		6.0		

while 16.67 per cent of them scored below the mean, and 45.83 per cent of the normal pupils scored within the mean class-interval. The mean score of 8.83 indicated a grade-placement of 6.3, which is below the norm of expectancy.

Retarded Group.-- The data on the Multiplication component for the retarded pupils indicated a range from a low of 0 to a high of 15, with

TABLE 90

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (MULTIPLICATION) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	8.83	2.98	0.62			
and					0.89	1.69	1.89
Retarded	22	7.14	2.94	0.64			

a mean score of 7.14, a median score of 6.83, a standard deviation of 2.94, and a standard error of the mean of 0.64. Approximately 36.34 per cent of the retarded pupils scored above the mean, while 22.72 per cent of them scored below the mean, and 40.91 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.14 indicated a grade-placement of 6.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 90, page 169, for the normal pupils the mean was 8.83, for the retarded pupils 7.14, with a difference of 1.69 in favor of the normal pupils. The median for the normal pupils was 8.95 and for the retarded pupils it was 6.83, with a difference of 2.12 in favor of the normal pupils. The standard deviation for the normal pupils was 2.98 and for the retarded pupils it was 2.94, with a difference of .04 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.62 and for the retarded pupils it was 0.64, with a difference of .02 in favor of the

retarded pupils. The grade-placements were 6.3 and 6.0 for the normal and retarded groups, respectively, to show a difference of 0.3 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 1.89. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Multiplication" was not statistically significant.

Results on the California Achievement Test (Division).--The data on the "Division" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 91, page 171, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Division component for the normally progressing pupils indicated a range from a low of 4 to a high of 13, with a mean score of 8.45, a median score of 9.3, a standard deviation of 2.52, and a standard error of the mean of 0.52. Approximately 45.83 per cent of the normal pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 12.50 per cent of the normal pupils scored within the mean class-interval. The mean score of 8.45 indicated a grade-placement of 6.3, which is below the norm of expectancy.

Retarded Group.-- The data on the Division component for the retarded pupils indicated a range from a low of 0 to a high of 11, with a mean score of 6.96, a median score of 7.72, a standard deviation of 2.76, and a standard error of the mean of 0.60. Approximately 50.00 per cent of the retarded pupils scored above the mean, while 27.27 per cent of them scored below the mean, and 22.72 per cent of the retarded pupils scored

TABLE 91

DISTRIBUTION OF THE RAW SCORES ON THE DIVISION COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12 - 13	1	4.17	0	0.00	1	2.17
10 - 11	10	41.66	4	18.18	14	30.43
8 - 9	3	12.50	7	31.82	10	21.73
6 - 7	5	20.83	5	22.72	10	21.73
4 - 5	5	20.83	3	13.64	8	17.39
2 - 3	0	0.00	2	9.09	2	4.34
0 - 1	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.99	46	99.96
Mean		8.45		6.96		
Median		9.3		7.72		
Sigma		2.52		2.76		
Sigma $_m$		0.52		0.60		
G. P.		6.3		6.0		

within the mean class-interval. The mean score of 6.96 indicated a grade-placement of 6.0, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 92, for the normal pupils the mean was 8.45, for the retarded pupils it was 6.96, with a difference of 1.49 in favor of the normal pupils. The median for the normal pupils was 9.3 and for the retarded pupils it was 7.72, with a difference of 1.58 in favor of the normal pupils. The standard

TABLE 92

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (DIVISION) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	8.45	2.52	0.52			
and					0.80	1.49	1.86
Retarded	22	6.96	2.76	0.60			

deviation for the normal pupils was 2.52 and for the retarded pupils it was 2.76, with a difference of .24 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.52 and for the retarded pupils it was 0.60, with a difference of .08 in favor of the retarded pupils. The grade-placements were 6.3 and 6.0 for the normal and retarded groups, respectively, to show a difference of 0.3 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 1.86. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Division" was not statistically significant.

Results on the California Achievement Test (Total Arithmetic Fundamentals).--The data on the "Total Arithmetic Fundamentals" component of the California Achievement Test as revealed by the scores obtained by

TABLE 93

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL ARITHMETIC FUNDAMENTALS COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
35 - 39	1	4.17	0	0.00	1	2.17
30 - 34	0	0.00	0	0.00	0	0.00
25 - 29	7	29.16	0	0.00	7	15.21
20 - 24	2	8.33	5	22.72	7	15.21
15 - 19	12	50.00	10	45.45	22	47.84
10 - 14	2	8.33	5	22.72	7	15.21
5 - 9	0	0.00	2	9.09	2	4.34
Total	24	99.99	22	99.98	46	99.98
Mean		20.75		16.09		
Median		18.67		16.5		
Sigma		5.95		4.40		
Sigma $_{M}$		1.24		0.96		
G. P.		5.0		4.7		

the two groups of pupils, and as presented in Table 93, page 173, and Figure 14, page 174, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Arithmetic Fundamentals component for the normally progressing pupils indicated a range from a low of 10 to a high of 39, with a mean score of 20.75, a median score of 18.67, a standard deviation of 5.95, and a standard error of the mean of 1.24. Approximately 33.33 per cent of the normal pupils scored above

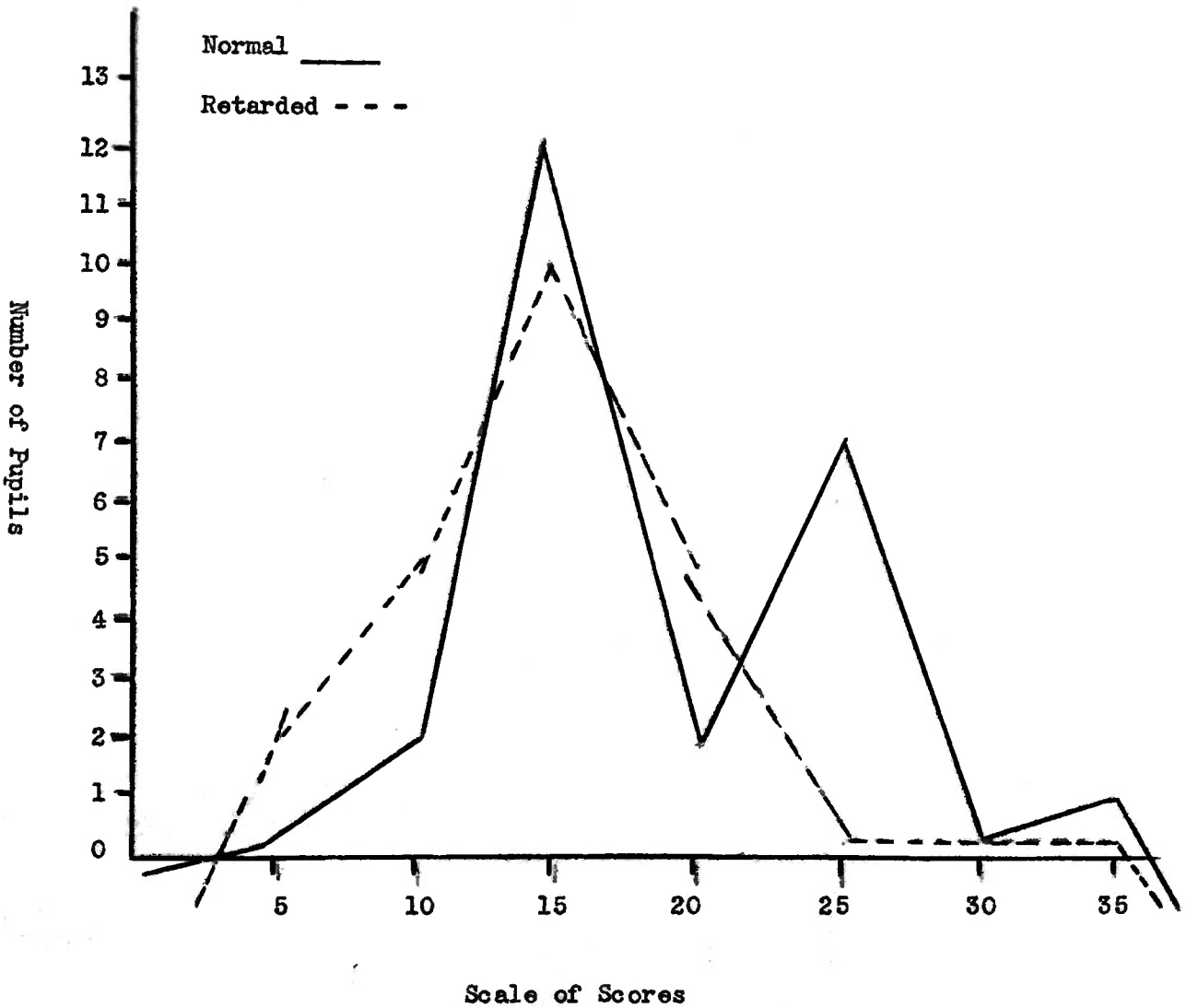

Fig. 14.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Arithmetic Fundamentals) California Achievement Test.

the mean, while 58.33 per cent of them scored below the mean, and 8.33 per cent of the normal pupils scored within the mean class-interval. The mean score of 20.75 indicated a grade-placement of 5.0, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Arithmetic Fundamentals component for the retarded pupils indicated a range from a low of 5 to a high of 24, with a mean score of 16.09, a median score of 16.5, a standard deviation of 4.40, and a standard error of the mean of 0.96. Approximately 22.72 per cent of the retarded pupils scored above the mean, while 31.81 per cent of them scored below the mean, and 45.45 per cent of the retarded pupils scored within the mean class-interval. The mean score of 16.09 indicated a grade-placement of 4.7, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 94, page 176, for the normal pupils the mean was 20.75, for the retarded pupils it was 16.09, with a difference of 4.66 in favor of the normal pupils. The median for the normal pupils was 18.67 and for the retarded pupils it was 16.5, with a difference of 2.17 in favor of the normal pupils. The standard deviation for the normal pupils was 5.95 and for the retarded pupils it was 4.40, with a difference of 1.55 in favor of the normal pupils. The standard error of the mean for the normal pupils was 1.03 and for the retarded pupils it was 0.96, with a difference of .07 in favor of the normal pupils. The grade-placements were 5.0 and 4.7 for the normal and retarded groups, respectively, to show a difference of 0.3 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 2.99. This "t" was

TABLE 94

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (TOTAL ARITHMETIC FUNDAMENTALS) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	20.75	5.95	1.24			
and					1.56	4.66	2.99
Retarded	22	16.09	4.40	0.96			

significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Arithmetic Fundamentals" was statistically significant.

Results on the California Achievement Test (Capitalization).--The data on the "Capitalization" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 95, page 177, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Capitalization component for the normally progressing pupils indicated a range from a low of 2 to a high of 15, with a mean score of 9.09, a median score of 9.7, a standard deviation of 2.68, and a standard error of the mean of 0.55. Approximately 54.16 per cent of the normal pupils scored above the mean, while 29.17 per cent of them scored below the mean, and 16.66 per cent of the normal

TABLE 95

DISTRIBUTION OF THE RAW SCORES ON THE CAPITALIZATION COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
14 - 15	1	4.17	1	4.54	2	4.34
12 - 13	2	8.33	1	4.54	3	6.52
10 - 11	10	41.66	4	18.18	14	30.43
8 - 9	4	16.66	6	27.27	10	21.73
6 - 7	5	20.83	5	22.72	10	21.73
4 - 5	1	4.17	2	9.09	3	6.52
2 - 3	1	4.17	3	13.64	4	8.69
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	99.98	46	99.96
Mean		9.09		7.68		
Median		9.7		7.83		
Sigma		2.68		3.12		
$Sigma_m$		0.55		0.68		
G. P.		5.9		5.6		

pupils scored within the mean class-interval. The mean score of 9.09 indicated a grade-placement of 5.9, which is below the norm of expectancy.

Retarded Group.-- The data on the Capitalization component for the retarded pupils indicated a range from a low of 2 to a high of 15, with a mean score of 7.68, a median score of 7.83, a standard deviation of

TABLE 96

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (CAPITALIZATION) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	9.09	2.68	0.55			
and					0.87	1.41	1.62
Retarded	22	7.68	3.12	0.68			

3.12, and a standard error of the mean of 0.68. Approximately 27.26 per cent of the retarded pupils scored above the mean, while 45.45 per cent of them scored below the mean, and 27.27 per cent of the retarded pupils scored within the mean class-interval. The mean score of 7.68 indicated a grade-placement of 5.6, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 96, page 178, for the normal pupils the mean was 9.09, for the retarded pupils it was 7.68, with a difference of 1.41 in favor of the normal pupils. The median for the normal pupils was 9.7 and for the retarded pupils it was 7.83, with a difference of 1.87 in favor of the normal pupils. The standard deviation for the normal pupils was 2.68 and for the retarded pupils it was 3.12, with a difference of .44 in favor of the retarded pupils. The standard error of the mean for the normal pupils was 0.55 and for the retarded pupils 0.68, with a difference of .13 in favor of the retarded pupils. The grade-placements were 5.9 and 5.6 for the normal

and retarded groups, respectively, to show a difference of 0.3 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 1.62. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Capitalization" was not statistically significant.

Results on the California Achievement Test (Punctuation).--The data on the "Punctuation" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 97, page 180, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Punctuation component for the normally progressing pupils indicated a range from a low of 4 to a high of 17, with a mean score of 7.21, a median score of 6.5, a standard deviation of 3.04, and a standard error of the mean of 0.63. Approximately 37.51 per cent of the normal pupils scored above the mean, while 33.33 per cent of them scored below the mean, and 29.16 per cent of the normal pupils scored within the mean class-interval. The mean score of 7.21 indicated a grade-placement of 9.0, which is above the norm of expectancy.

Retarded Group.-- The data on the Punctuation component for the retarded pupils indicated a range from a low of 4 to a high of 9 with a mean score of 5.5, a median score of 5.19, a standard deviation of 1.64, and a standard error of the mean of 0.35. Approximately 40.91 per cent of the retarded pupils scored above the mean, and 59.09 per cent of them

TABLE 97

DISTRIBUTION OF THE RAW SCORES ON THE PUNCTUATION COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
16 - 17	1	4.17	0	0.00	1	2.17
14 - 15	1	4.17	0	0.00	1	2.17
12 - 13	0	0.00	0	0.00	0	0.00
10 - 11	1	4.17	0	0.00	1	2.17
8 - 9	6	25.00	2	9.09	8	17.39
6 - 7	7	29.16	7	31.82	14	30.43
4 - 5	8	33.33	13	59.09	21	45.63
2 - 3	0	0.00	0	0.00	0	0.00
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	100.00	22	100.00	46	99.96
Mean		7.21		5.5		
Median		6.5		5.19		
Sigma		3.04		1.64		
$Sigma_m$		0.63		0.35		
G. P.		9.0		7.1		

scored within the mean class-interval. The mean score of 5.5 indicated a grade-placement of 7.1, which is above the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 98, page 181, for the normal pupils the mean was 7.21, for the retarded pupils it was 5.5, with a difference of 1.71 in favor of the normal pupils. The median

TABLE 98

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (PUNCTUATION) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	7.21	3.04	0.63			
and					0.72	1.71	2.37
Retarded	22	5.5	1.64	0.35			

for the normal pupils was 6.5 and for the retarded pupils it 5.19, with a difference of 1.31 in favor of the normal pupils. The standard deviation for the normal pupils was 3.04 and for the retarded pupils it was 1.64, with a difference of 1.40 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.63 and for the retarded pupils it was 0.35, with a difference of .28 in favor of the normal pupils. The grade-placements were 9.0 and 7.1 for the normal and retarded groups, respectively, to show a difference of 1.9 in favor of the normal pupils.

The "t" value for data on the two groups was 2.37. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Punctuation" was not statistically significant.

Results on the California Achievement Test (Words and Sentences).--

TABLE 99

DISTRIBUTION OF THE RAW SCORES ON THE WORDS AND SENTENCES COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
16 - 17	5	20.83	2	9.09	7	15.22
14 - 15	5	20.83	2	9.09	7	15.22
12 - 13	7	29.16	7	31.82	14	30.43
10 - 11	4	16.66	5	22.72	9	19.56
8 - 9	1	4.17	3	13.64	4	8.69
6 - 7	2	8.33	3	13.64	5	10.87
4 - 5	0	0.00	0	0.00	0	0.00
2 - 3	0	0.00	0	0.00	0	0.00
0 - 1	0	0.00	0	0.00	0	0.00
Total	24	99.98	22	100.00	46	99.99
Mean		12.75		11.23		
Median		12.64		11.78		
Sigma		2.90		2.86		
Sigma M		0.60		0.62		
G. P.		5.0		4.5		

The data on the "Words and Sentences" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 99, page 182, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Words and Sentences component for the

normally progressing pupils indicated a range from a low of 6 to a high of 17, with a mean score of 12.75, a median score of 12.64, a standard deviation of 2.90, and a standard error of the mean of 0.60. Approximately 41.66 per cent of the normal pupils scored above the mean, while 29.16 per cent of them scored below the mean, and 29.16 per cent of the normal pupils scored within the mean class-interval. The mean score of 12.75 indicated a grade-placement of 5.0, which is below the norm of expectancy.

Retarded Group.-- The data on the Words and Sentences component for the retarded pupils indicated a range from a low of 6 to a high of 17, with a mean score of 11.23, a median score of 11.78, a standard deviation of 2.86, and a standard error of the mean of 0.62. Approximately 50.00 per cent of the retarded pupils scored above the mean, while 27.28 per cent of them scored below the mean, and 22.72 per cent of the retarded pupils scored within the mean class-interval. The mean score of 11.23 indicated a grade-placement of 4.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 100, page 184, for the normal pupils the mean was 12.75, for the retarded pupils it was 11.23 with a difference of 1.52 in favor of the normal pupils. The median for the normal pupils was 12.64 and for the retarded pupils it was 11.78, with a difference of 0.86 in favor of the normal pupils. The standard deviation for the normal pupils was 2.90 and for the retarded pupils it was 2.86, with a difference of .04 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.60 and for the retarded pupils it was 0.62, with a difference of .02

TABLE 100

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (WORDS AND SENTENCES) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	12.75	2.90	0.60			
and					0.86	1.52	1.76
Retarded	22	11.23	2.86	0.62			

in favor of the retarded pupils. The grade-placements were 5.0 and 4.5 for the normal and retarded groups, respectively, to show a difference of 0.5 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 1.76. This "t" was not significant as it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Words and Sentences" was not statistically significant.

Results on the California Achievement Test (Parts of Speech).--The data on the "Parts of Speech" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 101, page 185, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Parts of Speech component for the normally progressing pupils indicated a range from a low of 2 to a high

TABLE 101

DISTRIBUTION OF THE RAW SCORES ON THE PARTS OF SPEECH COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
14 - 15	1	4.17	0	0.00	1	2.17
12 - 13	4	16.66	1	4.54	5	10.87
10 - 11	9	37.50	0	0.00	9	19.56
8 - 9	3	12.50	5	22.72	8	17.39
6 - 7	5	20.83	7	31.82	12	26.09
4 - 5	1	4.17	6	27.27	7	15.22
2 - 3	1	4.17	2	9.09	3	6.52
0 - 1	0	0.00	1	4.54	1	2.17
Total	24	100.00	22	99.98	46	99.99
Mean		9.33		6.05		
Median		9.94		7.21		
Sigma		2.82		2.02		
$Sigma_m$		0.58		0.44		
G. P.		8.3		7.0		

of 15, with a mean score of 9.33, a median score of 9.94, a standard deviation of 2.82, and a standard error of the mean of 0.58. Approximately 58.33 per cent of the normal pupils scored above the mean, while 29.17 per cent of them scored below the mean, and 12.50 per cent of the normal pupils scored within the mean class-interval. The mean score of 9.33 indicated a grade-placement of 8.3, which is above the norm of

TABLE 102

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (PARTS OF SPEECH) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of $M_1 - M_2$	Diff. of Mean	"t"
Normal	24	9.33	2.82	0.58			
and					0.73	3.28	4.49
Retarded	22	6.05	2.02	0.44			

expectancy.

Retarded Group.-- The data on the Parts of Speech component for the retarded pupils indicated a range from a low of 2 to a high of 13, with a mean score of 6.05, a median score of 7.21, a standard deviation of 2.02, and a standard error of the mean of 0.44. Approximately 27.26 per cent of the retarded pupils scored above the mean, while 40.90 per cent of them scored below the mean, and 31.82 per cent of the retarded pupils scored within the mean class-interval. The mean score of 6.05 indicated a grade-placement of 7.0, which is at the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 102, page 186, for the pupils the mean was 9.33, for the retarded pupils it was 6.05, with a difference of 3.28 in favor of the normal pupils. The median score for the normal pupils was 9.94 and for the retarded pupils it was 7.21, with a difference of 2.73 in favor of the normal pupils. The standard deviation for the normal pupils was 2.82 and for the

retarded pupils it was 2.02, with a difference of .80 in favor of the normal pupils. The standard error of the mean for the normal pupils was 0.58 and for the retarded pupils it was 0.44, with a difference of .14 in favor of the normal pupils. The grade-placements were 8.3 and 7.0 for the normal and retarded groups, respectively, to show a difference of 1.3 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 4.49. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Parts of Speech" was statistically significant.

Results on the California Achievement Test (Spelling).--The data on the "Spelling" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 103, page 188, and Figure 15, page 189, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Spelling component for the normally progressing pupils indicated a range from a low of 5 to a high of 29, with a mean score of 18.04, a median score of 18.25, a standard deviation of 6.10, and a standard error of the mean of 1.27. Approximately 41.66 per cent of the normal pupils scored above the mean, while 25.00 per cent of them scored below the mean, and 33.33 per cent of the normal pupils scored within the mean class-interval. The mean score of 18.04 indicated a grade-placement of 8.6, which is above the norm of expectancy.

Retarded Group.-- The data on the Spelling component for the retarded

TABLE 103

DISTRIBUTION OF THE RAW SCORES ON THE SPELLING COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
25 - 29	4	16.66	0	0.00	4	8.69
20 - 24	6	25.00	1	4.54	7	15.22
15 - 19	8	33.33	5	22.72	13	28.26
10 - 14	3	12.50	6	27.27	9	19.56
5 - 9	3	12.50	9	40.91	12	26.09
0 - 4	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.98	46	99.99
Mean		18.04		11.09		
Median		18.25		10.05		
Sigma		6.10		4.9		
Sigma $_{M}$		1.27		1.07		
G. P.		8.6		6.8		

pupils indicated a range from a low of 0 to a high of 24, with a mean score of 11.09, a median score of 10.05, a standard deviation of 4.9, and a standard error of the mean of 1.07. Approximately 27.26 per cent of the retarded pupils scored above the mean, while 45.45 per cent of them scored below the mean, and 27.27 per cent of the retarded pupils scored within the mean class-interval. The mean score of 11.09 indicated a grade-placement of 6.8, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 104, page

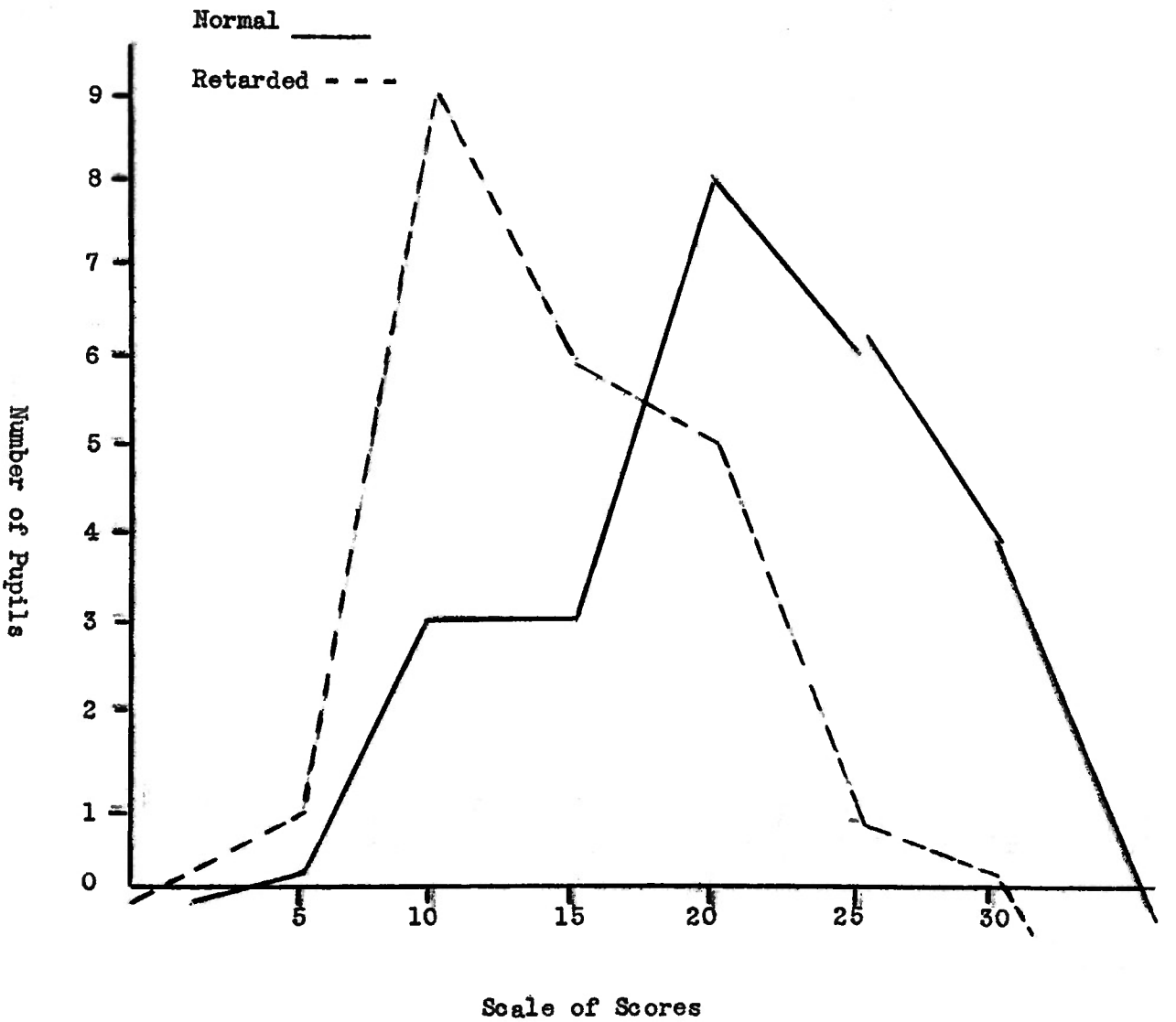

Fig. 15.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Spelling) California Achievement Test.

TABLE 104

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (SPELLING) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	18.04	6.10	1.27			
and					1.66	6.95	4.24
Retarded	22	11.09	4.9	1.07			

190, for the normal pupils the mean was 18.04, for the retarded pupils it was 11.09, with a difference of 6.95 in favor of the normal pupils. The median for the normal pupils it was 18.25 and for the retarded pupils it was 10.05 with a difference of 2.20 in favor of the normal pupils. The standard deviation for the normal pupils was 6.10 and for the retarded pupils it was 4.9, with a difference of 1.2 in favor of the normal pupils. The standard error of the mean for the normal pupils was 1.27 and for the retarded pupils it was 1.07, with a difference of .20 in favor of the normal pupils. The grade-placements were 8.6 and 6.8 for the normal and retarded groups, respectively, to show a difference of 1.8 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 4.24. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the

component of "Spelling" was statistically significant.

Results on the California Achievement Test (Total Language).--The data on the "Total Language" component of the California Achievement Test as revealed by scores obtained by the two groups of pupils, and as presented in Table 105, page 192, and Figure 16, page 193, are found in the separate paragraphs to follow.

Normal Group.-- The data on the Total Language component for the normally progressing pupils indicated a range from a low of 35 to a high of 79, with a mean score of 56.58, a median score of 56.5, a standard deviation of 11.45, and a standard error of the mean of 2.38. Approximately 37.50 per cent of the normal pupils scored above the mean, while 41.66 per cent of them scored below the mean, and 20.83 per cent of the normal pupils scored within the mean class-interval. The mean score of 56.58 indicated a grade-placement of 7.7, which is at the norm of expectancy.

Retarded Group.-- The data on the Total Language component for the retarded pupils indicated a range from a low of 25 to a high of 64, with a mean score of 44.27, a median score of 45.33, a standard deviation of 9.60, and a standard error of the mean of 2.09. Approximately 54.54 per cent of the retarded pupils scored above the mean, while 31.82 per cent of them scored below the mean, and 13.64 per cent of the retarded pupils scored within the mean class-interval. The mean score of 45.33 indicated a grade-placement of 6.5, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 106, page 194, for the normal pupils the mean was 56.58, for the retarded pupils it was 44.27, with a difference of 12.31 in favor of the normal pupils.

TABLE 105

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL LANGUAGE COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
75 - 79	1	4.17	0	0.00	1	2.17
70 - 74	3	12.50	0	0.00	3	6.52
65 - 69	4	16.66	0	0.00	4	8.69
60 - 64	1	4.17	1	4.54	2	4.34
55 - 59	5	20.83	2	9.09	7	15.22
50 - 54	2	8.33	3	13.64	5	10.87
45 - 49	3	12.50	6	27.27	9	19.56
40 - 44	4	16.66	3	13.64	7	15.22
35 - 39	1	4.17	3	13.63	4	8.69
30 - 34	0	0.00	3	13.64	3	6.52
26 - 29	0	0.00	1	4.54	1	2.17
20 - 24	0	0.00	0	0.00	0	0.00
Total	24	99.99	22	100.00	46	99.97
Mean		56.58		44.27		
Median		56.5		45.33		
Sigma		11.45		9.60		
Sigma $_{M}$		2.38		2.09		
G. P.		7.7		6.5		

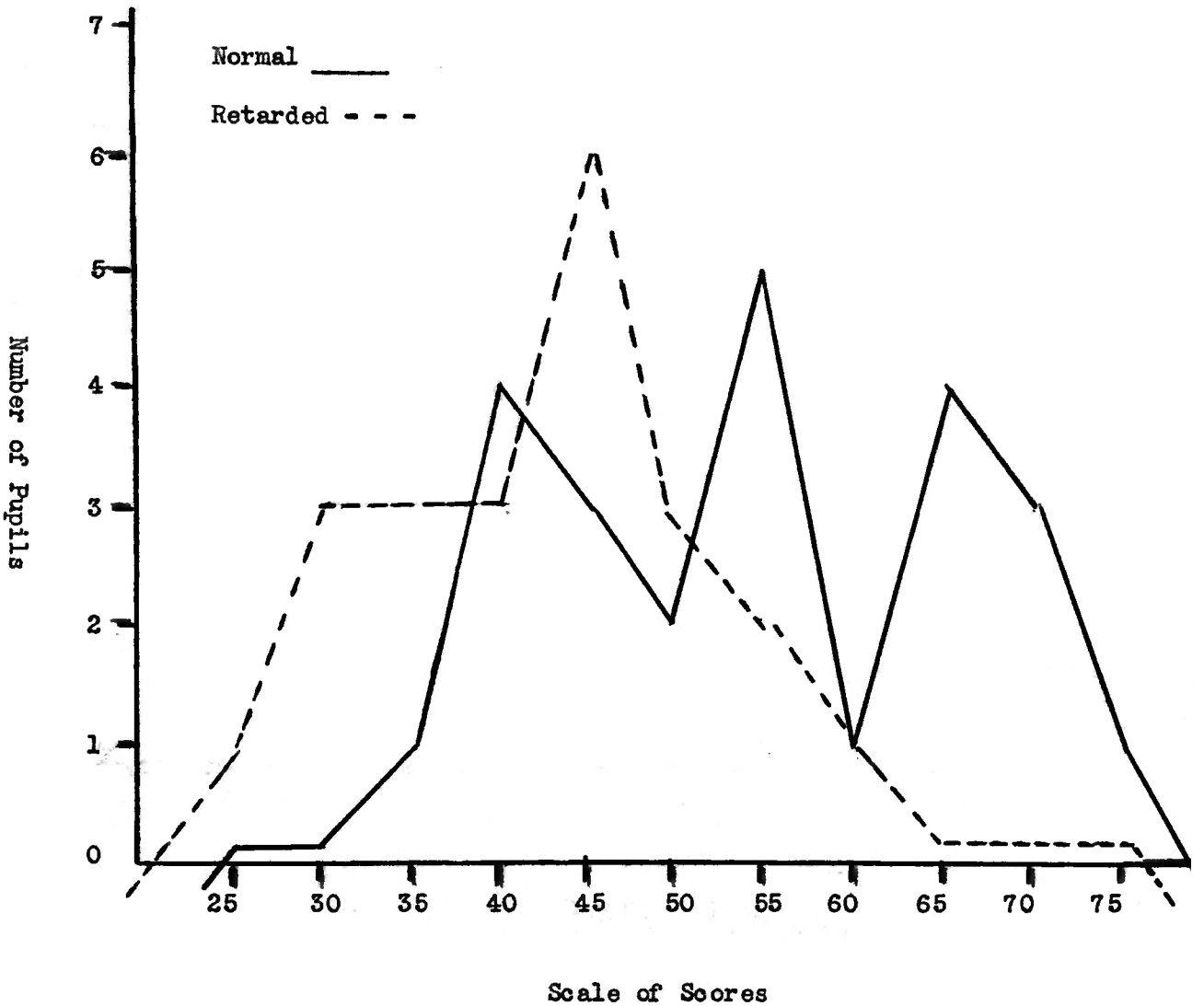

Fig. 16.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Language) California Achievement Test.

TABLE 106

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (TOTAL LANGUAGE) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	56.58	11.45	2.38			
and					3.16	12.31	3.89
Retarded	22	44.27	9.60	2.09			

The median for the normal pupils was 56.5 and for the retarded pupils it was 45.33, with a difference of 12.17 in favor of the normal pupils. The standard deviation for the normal pupils was 11.45 and for the retarded pupils it was 9.60, with a difference of 1.85 in favor of the normal pupils. The standard error of the mean for the normal pupils was 2.38 and for the retarded pupils it was 2.09, with a difference of .29 in favor of the normal pupils. The grade-placements were 7.7 and 6.5 for the normal and retarded groups, respectively, to show a difference of 1.2 in favor of the normally progressing pupils.

The "t" value for data on the two groups was 3.88. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Language" was statistically significant.

Results on the California Achievement Test (Total Achievement).--The

data on the "Total Achievement" component of the California Achievement Test as revealed by the scores obtained by the two groups of pupils, and as presented in Table 107, page 196, and Figure 17, page 197, are found in the separate paragraphs to follow.

Normal Group.--The data on the Total Achievement component for the normally progressing pupils indicated a range from a low of 120 to a high of 229, with a mean score of 175.70, a median score of 183.5, a standard deviation of 30.60, a standard error of the mean of 6.37. Approximately 58.32 per cent of the normally progressing pupils scored above the mean, while 37.50 per cent of them scored below the mean, and 4.17 per cent of the normal pupils scored within the mean class-interval. The mean score of 175.70 indicated a grade-placement of 6.6, which is below the norm of expectancy.

Retarded Group.-- The data on the Total Achievement component for the retarded pupils indicated a range from a low of 100 to a high of 209, with a mean score of 140.41, a median score of 135.21, a standard deviation of 22.70, and a standard error of the mean of 4.93. Approximately 18.18 per cent of the retarded pupils scored above the mean, while 63.62 per cent of them scored below the mean, and 18.18 per cent of the retarded pupils scored within the mean class-interval. The mean score of 140.41 indicated a grade-placement of 5.8, which is below the norm of expectancy.

Comparative Data and "t" Ratio.-- As indicated in Table 108, page 198, for the normal pupils the mean was 175.70, for the retarded pupils 140.41, with a difference of 35.29 in favor of the normal pupils. The median for the normal pupils was 183.5 and for the retarded pupils it

TABLE 107

DISTRIBUTION OF THE RAW SCORES ON THE TOTAL ACHIEVEMENT COMPONENT OF THE CALIFORNIA ACHIEVEMENT TEST AS OBTAINED BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Scores	Normal		Retarded		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
220 - 229	2	8.33	0	0.00	2	4.34
210 - 219	2	8.33	0	0.00	2	4.34
200 - 209	1	4.17	1	4.54	2	4.34
190 - 199	2	8.33	0	0.00	2	4.34
180 - 189	7	29.16	0	0.00	7	15.22
170 - 179	1	4.17	3	13.64	4	8.69
160 - 169	1	4.17	0	0.00	1	2.17
150 - 159	3	12.50	0	0.00	3	6.52
140 - 149	0	0.00	4	18.18	4	8.69
130 - 139	2	8.33	7	31.82	9	19.56
120 - 129	3	12.50	5	22.72	8	17.39
110 - 119	0	0.00	1	4.54	1	2.17
100 - 109	0	0.00	1	4.54	1	2.17
Total	24	99.99	22	99.98	46	99.94
Mean		175.70		140.41		
Median		183.5		135.21		
Sigma		30.60		22.70		
$Sigma_m$		6.37		4.74		
G. P.		6.5		5.7		

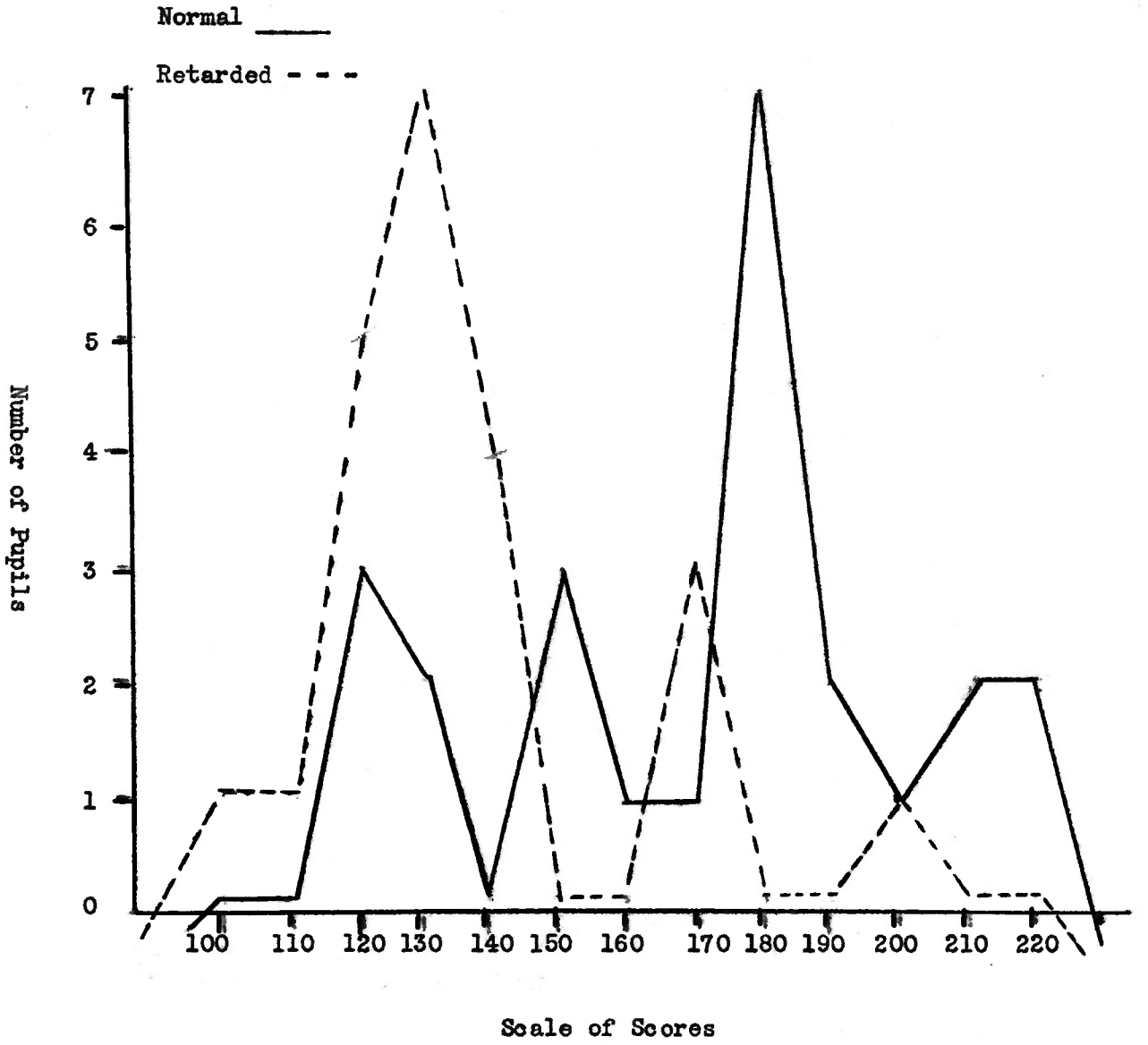

Fig. 17.- Frequency polygon of the scores made by twenty-four normal and twenty-two retarded pupils on (Total Achievement) California Achievement Test.

TABLE 108

SIGNIFICANT DIFFERENCES ON THE CALIFORNIA ACHIEVEMENT TEST (TOTAL ACHIEVEMENT) OF THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Group	Number of Cases	Mean	Sigma	S. E. of Mean	S. E. of M_1-M_2	Diff. of Mean	"t"
Normal	24	175.70	30.60	6.37			
and					8.05	35.29	4.38
Retarded	22	140.41	22.70	4.93			

was 135.21, with a difference of 48.29 in favor of the normal pupils. The standard error of the mean for the normal pupils was 6.37 and for the retarded pupils it was 4.74, with a difference of 1.63 in favor of the normal pupils. The standard deviation for the normal pupils was 30.60 and for the retarded pupils it was 22.70, with a difference of 7.90 in favor of the normal pupils. The grade-placements were 6.5 and 5.7 for the normal and retarded groups, respectively, to show a difference of 0.8 in favor of the normally progressing pupils.

The "t" for data on the two groups was 4.38. This "t" was significant as it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the group of normally progressing pupils and the group of educationally retarded pupils on the component of "Total Achievement" was statistically significant.

Summary "Indices" of Pupils.-- The composite data on the chronological ages, mental ages, intelligence quotients, and grade-placements and

TABLE 109

THE DISTRIBUTION OF THE CHRONOLOGICAL AGES, MENTAL AGES, AND INTELLIGENCE QUOTIENTS AS BASED ON THE DATA OF THE SCORES OBTAINED ON THE CALIFORNIA TEST OF MENTAL MATURITY BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Pupil's Code	Normal				Retarded			
	C.A.	M.A.	I. Q.	G.P.	C.A.	M.A.	I.Q.	G.P.
A	144	171	118	8.9	160	131	81	5.6
B	144	120	83	4.8	160	143	89	6.6
C	144	114	79	4.2	175	105	60	3.5
D	145	159	109	7.9	160	122	76	4.9
E	143	115	80	4.3	174	118	67	4.6
F	150	145	96	6.7	173	131	75	5.6
G	132	136	103	6.0	168	128	76	5.4
H	150	149	99	7.1	156	126	80	5.2
I	132	155	117	7.6	157	141	89	6.4
J	150	150	100	7.2	172	116	60	4.4
K	135	154	115	7.5	174	169	97	8.1
L	145	124	85	5.1	168	118	64	4.6
M	148	132	88	5.7	179	136	76	6.0
N	147	139	94	6.2	186	128	68	5.4
O	136	157	115	7.7	168	136	83	6.0
P	151	122	81	4.9	160	111	69	4.0
Q	153	122	79	4.9	192	116	60	4.4
R	156	145	92	6.7	160	128	80	5.4
S	146	133	91	5.8	160	128	80	5.4
T	156	134	85	5.8	180	128	71	5.4
U	149	137	92	6.1	183	145	79	6.7
V	150	130	86	5.6	168	116	68	4.4
W	144	137	95	6.1				
X	151	108	71	3.7				
Mean	145	137	93	6.6	169	128	74	5.3

the percentile of norms of the twenty-four normal pupils and twenty-two retarded pupils concerned in this study, which have been detailedly presented in preceding sections, are to be found summarized in Tables 109, 110, 111 and 112 to follow. The mental ages, intelligence quotients, and grade-placements of the forty-six pupils are derived from two sources,

namely: the Manual for the California Test of Mental Maturity and the Manual for the California Achievement Test, with the derived values being presented in Tables 109 and 110, respectively.

"Indices" based on the California Test of Mental Maturity.--The mental ages, intelligence quotients, and the grade-placements of the forty-six pupils as derived from the Manual of the California Test of Mental Maturity are presented in Table 109, page 199. The chronological ages of the normal pupils ranged from a low of 132 months (11 years) to a high of 151 months (12.7 years), with a mean of 145 months (12.1 years); whereas, the retarded pupils showed a chronological age which ranged from a low of 156 months (13 years) to a high of 192 months (16 years) with a mean of 169 (14.1 years), to show a difference of 2 years between the ages of the normal and retarded pupils.

Further, Table 109, shows that the mental ages of the normal pupils ranged from a low of 108 months (9 years) to a high of 171 months (14.3 years), with a mean of 137 months (11.5 years); whereas, the mental ages of the retarded pupils ranged from a low of 105 months (8.3 years) to a high of 169 months (14.1 years), with a mean of 128 months (10.8 years) to show a difference of 9 months in favor of the normal pupils.

Again, Table 109, shows that the intelligence (I.Q.'s) quotients of the normal pupils ranged from a low of 71 months (6.11 years) to a high of 118 months (9.10 years), with a mean of 93; whereas, the intelligence (I.Q.'s) quotients of the retarded pupils ranged from a low of 60 months (5 years) to a high of 97 months (8.1 years), with a mean of 74 months (6.2 years), to show a difference of 19 months (1.7 years) in favor of the normal pupils.

Lastly, Table 109, shows that the grade-placement of the normal pupils ranged from a low of 3.7 to a high of 8.9, with a mean of 6.6; whereas, the grade-placement of the retarded pupils ranged from a low 3.5 to a high of 8.1, with a mean of 5.3; to show a difference of 1.3 in favor of the normal pupils as shown in the grade-placement index of the California Test of Mental Maturity.

Therefore, it appears from the data revealed in Table 109, that the twenty-four normal pupils and the twenty-two retarded pupils of this study were found to be for practical purposes at different levels of intelligence and achievement in terms of grade-placements.

"Indices" based on the California Test of Achievement.--The mental ages, intelligence quotients, and grade-placements of forty-six pupils as derived from the Manual of the California Achievement Test are presented in Table 110, page 202. The chronological ages of the normal pupils ranged from a low of 132 months (11 years) to a high of 151 months (12.7 years), with a mean of 145 months (12.1 years); whereas, the retarded pupils showed chronological ages which ranged from a low of 156 months (13 years) to a high of 192 months (16 years), with a mean of 169 months (14.1 years) to show a difference of 2 years between the ages of the normal and retarded pupils.

Further, Table 110, shows that the mental ages of the normal pupils ranged from a low of 127 months (10.7 years) to a high of 159 months (12.3 years), with a mean of 144; whereas, the mental ages of the retarded pupils ranged from a low of 120 months (10 years) to a high of 149 months (12.5 years), with a mean of 132 months (11.0 years), to show a

TABLE 110

THE DISTRIBUTION OF THE CHRONOLOGICAL AGES, MENTAL AGES, AND INTELLIGENCE QUOTIENTS AS BASED ON THE DATA OF THE SCORES OBTAINED ON THE CALIFORNIA ACHIEVEMENT TEST BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Pupil's Code	Normal				Retarded			
	C.A.	M.A.	I. Q.	G.P.	C.A.	M.A.	I.Q.	G.P.
A	144	158	109	7.9	160	122	76	4.9
B	144	133	92	5.8	160	136	85	6.0
C	144	138	98	5.6	175	133	76	5.7
D	145	137	94	6.1	160	120	75	4.8
E	143	136	93	6.0	174	135	77	5.9
F	150	149	99	7.1	173	129	74	5.5
G	132	130	98	5.6	168	135	80	5.9
H	150	159	106	7.9	156	143	91	6.7
I	132	153	115	7.4	157	142	91	6.5
J	150	144	96	6.7	172	120	75	4.8
K	135	135	100	5.9	174	149	85	7.1
L	145	144	99	6.7	168	141	85	6.4
M	148	149	100	7.1	179	135	75	5.9
N	147	136	91	6.0	186	122	65	5.5
O	136	153	112	7.4	168	143	85	6.6
P	151	128	84	5.4	160	130	81	5.6
Q	153	132	86	5.7	192	133	69	5.8
R	156	154	99	7.5	160	132	81	5.7
S	146	141	96	6.7	160	133	81	5.8
T	156	143	92	6.6	180	132	73	5.7
U	149	144	95	6.7	183	129	70	5.5
V	150	127	84	5.3	168	123	73	5.0
W	144	143	99	6.6				
X	151	141	93	6.4				
Mean	145	144	97	6.5	169	132	77	5.7

difference of 12 months (1 year) between the normal and retarded pupils.

Again, Table 110, shows that the achievement (I.Q.'s) intelligence quotient of the normal pupils ranged from a low of 84 months (7 years) to a high of 115 months (9.7 years), with a mean of 97 months (8.1 years); whereas, the achievement (I.Q.'s) intelligence quotients of the retarded

pupils ranged from a low of 69 months (5.9 years) to a high of 91 months (8.5 years), with a mean of 77 months (6.5 years) to show a difference of 20 months (1.8 years) in favor of the normal pupils.

Lastly, Table 110, shows that the grade-placement of the normal pupils ranged from a low of 5.3 to a high of 7.9, with a mean of 6.5; whereas, the grade-placement of the retarded pupils ranged from a low of 4.8 to a high of 7.1, with a mean 5.7, to show a difference of 8 in favor of the normal pupils as shown in the grade-placement index of the California Achievement Test.

Therefore, it appears from the data revealed in Table 110, that the twenty-four normal pupils and the twenty-two retarded pupils of this study were found to be for practical purposes at different levels of intelligence and achievement in terms of grade-placement.

Comparison of "Indices" on Intelligence and Achievement Tests.--The comparison of the "indices" revealed the following facts: that the mean score of mental ages for the normal pupils was 137 on the Intelligence Test and 144 on the Achievement Test; the mean score of I.Q.'s for the normal pupils was 93 on the Intelligence Test and 97 on the Achievement Test; the mean score of grade-placement for the normal pupils was 6.6 on the Intelligence Test and 6.5 on the Achievement Test. The mean score of the mental ages for the retarded pupils was 128 on the Intelligence Test and 132 on the Achievement Test; the mean score for I.Q.'s for the retarded pupils was 74 on the Intelligence Test and 77 on the Achievement Test; the mean score of grade-placement for the retarded pupils was 5.3 on the Intelligence Test and 5.7 on the Achievement Test.

Further, it appears from Tables 109 and 110, that both normal and

retarded groups were below the normal grade-placement on the Achievement and Intelligence Tests. However, the normal pupils were retarded by only (5) months in grade-placement according to the Achievement Test scores obtained and the retarded pupils were approximately one (1) year and seven (7) months retarded in grade-placement according to the Intelligence Test scores obtained. Looking ahead to Table 111 it is to be noted that on the Intelligence Test the normal pupils scored at the 30-percentile Norm; whereas, the retarded pupils scored at the 10-percentile Norm. On the other hand, on the Achievement Test the normal pupils scored at the 30-percentile Norm; whereas, the retarded pupils scored at the 15-percentile Norm. On the Personality Test, these forty-six Seventh-graders scored at the 40-percentile Norm and the 30-percentile Norm, normal and retarded pupils, respectively.

"Index" on the California Personality Test.--The data on the Personality evaluation of the twenty-four normal pupils and the twenty-two retarded pupils in this study are presented in Table 111, page 205, with the facts noted to follow. On the California Test of Personality the normal pupils showed a range of percentile from a low of 20 to a high of 75, with a mean of 40; whereas, the retarded pupils showed a range of percentile from a low of 5 to a high of 60, with a mean of 30; to show a difference of 10 percentile points in favor of the normally progressing pupils. These Seventh-graders (the retarded group markedly so) appear to be below the range of normal personality adjustment as measured by the California Test of Personality.

Summary of Percentile Norms on the Three Tests.--Table 112, page 206, presents a summary of the percentile norms obtained by the twenty-four

TABLE 111

DISTRIBUTION OF THE PERCENTILE NORMS AS BASED ON THE DATA OF THE SCORES OBTAINED ON THE CALIFORNIA TEST OF PERSONALITY BY THE FORTY-SIX PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Pupil's Code	Normal	Retarded
	Percentile Norms	Percentile Norms
A	50	45
B	60	5
C	50	30
D	40	60
E	65	40
F	30	30
G	30	10
H	40	40
I	60	10
J	35	30
K	30	20
L	40	30
M	55	30
N	35	30
O	60	45
P	60	50
Q	40	30
R	60	35
S	20	40
T	40	35
U	75	40
V	60	50
W	30	
X	30	
Mean	40	30

normal pupils and twenty-two retarded pupils on the California Tests of Personality, Achievement, and Intelligence which were administered to them for the purpose of obtaining the data for this study. Table 111, reveals that the normal pupils obtained scores within 3rd decile on the Intelligence and Achievement Tests, and within the 4th decile on the

TABLE 112

PERCENTILE NORMS OBTAINED ON THE CALIFORNIA TEST OF MENTAL MATURITY, ACHIEVEMENT, AND PERSONALITY, BY THE FORTY-SIX SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Tests	Normal	Retarded
	Percentile Norms	Percentile Norms
Intelligence	30	10
Achievement	30	15
Personality	40	30

Personality Test. The retarded pupils obtained scores within the lowest decile on the Intelligence and Achievement Tests and within the 3rd decile on the Personality Test. The test results show these Seventh-graders to be well below the average in native capacity, school achievement and normal personality adjustment. The retarded pupils showed a 20 point lower percentile than the 30-point percentile of the normal pupils in Intelligence; a 15-point lower percentile than the 30-point percentile of the normal pupils in Achievement; and a 10-point lower percentile than the 40-point percentile of the normal pupils in Personality.

CORRELATIONS BETWEEN THE TESTS

Introductory Statement.--There were two main objectives in the treatment of the data of this research, to wit: (a) to determine the significant differences, if any, between the scores obtained by the group of normally progressing pupils and the group of retarded pupils that

comprised the forty-six seventh-grade subjects; and (b) to determine the degree of correlation, if any, among the paired arrays of scores obtained by the group of normally progressing pupils and the group of retarded pupils, to whom the three tests were administered to gather the data requisite to this research.

This section of the report of this research will, therefore, present a series of six (6) basic correlations among the paired variables of the three tests: California Test of Mental Maturity, California Achievement Test, and California Test of Personality, as follows:

1. To ascertain the correlation, if any, between intelligence and academic achievement for the group of normally progressing pupils.
2. To ascertain the correlation, if any, between intelligence and personality for the normally progressing pupils.
3. To ascertain the correlation, if any, between personality and academic achievement for the group of normally progressing pupils.
4. To ascertain the correlation, if any, between intelligence and academic achievement for the group of educationally retarded pupils.
5. To ascertain the correlation, if any, between intelligence and personality for the group of educationally retarded pupils.
6. To ascertain the correlation, if any, between personality and academic achievement for the group of educationally retarded pupils.

Table 113, page 208, will present the correlations for the group of normally progressing pupils, and Table 114, page 209, will present the correlations for the group of retarded pupils.

The "r" between Total Mental Factors, Total Achievement, and Total Personality for Twenty-Four Normal Pupils.--Table 113, page 208, reveals the data on the "r's" between the scores obtained on the California Test

TABLE 113

CORRELATIONS DERIVED FROM RESULTS ON THE TOTAL CALIFORNIA TEST OF MENTAL MATURITY, TOTAL CALIFORNIA ACHIEVEMENT TEST, AND TOTAL CALIFORNIA TEST OF PERSONALITY OBTAINED BY THE TWENTY-FOUR NORMAL SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955

Variable	N	r	SEr	Obtained "t" *
Total Mental Factors and Total Achievement	24	.63	.15	4.20
Total Mental Factors and Total Personality	24	-.34	.15	2.37
Total Achievement and Total Personality	24	-.34	.15	2.37

* The "criterion of reliability" set for these data was a "t" of 2.69 at the one per cent level of confidence at 44 degrees of freedom.

of Mental Maturity, the California Achievement Test and the California Personality Test. The "r's" were found to be as follows: The Total Mental Factors and Total Achievement a "r" of .63, a standard error of "r" of .15, with a "t" of 4.20 at the one per cent level of confidence, which was significant; the Total Mental Factors and the Total Personality a "r" of .34, a standard error of .15, with a "t" of 2.37 at the one per cent level of confidence, which was not significant; the Total Achievement and Personality a "r" of .34, a standard error of .15, with a "t" of 2.37 at the one per cent level of confidence, which was not significant.

Therefore, it is to be noted, that there was a significant positive correlation or relationship between Total Mental Factors and Total

TABLE 114

CORRELATIONS DERIVED FROM RESULTS ON THE TOTAL CALIFORNIA TEST OF MENTAL MATURITY, TOTAL CALIFORNIA ACHIEVEMENT TEST, AND TOTAL CALIFORNIA TEST OF PERSONALITY OBTAINED BY THE TWENTY-TWO RETARDED SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Variable	N	r	SEr	Obtained "t" *
Total Mental Factors and Total Achievement	22	.50	.15	3.33
Total Mental Factors and Total Personality	22	.05	.15	.33
Total Achievement and Total Personality	22	.09	.15	.60

* The "criterion of reliability" set for these data was a "t" of 2.69 at the one per cent level of confidence at 44 degrees of freedom.

Achievement in the obtained scores of these twenty-four normally progressing pupils. However, there was a negative correlation between Total Mental Factors and Total Personality, Total Achievement and Total Personality, which was not statistically significant at the one per cent level of confidence.

The "r" between Total Mental Factors, Total Achievement, and Total Personality for Twenty-Two Retarded Pupils.--Table 114, page 209, reveals the data on the "r's" between the scores on the California Test of Mental Maturity, the California Achievement Test and the California Personality Test. The "r's" were found to be as follows: The Total Mental Factors and Total Achievement a "r" of .50, a standard error of "r" of .15, with a "t" of 3.33 at the one per cent level of confidence,

which was significant; The Total Mental Factors and the Total Personality a "r" of .05, a standard error of .15, with a "t" of .33 at the one per cent level of confidence, which was not significant; The Total Achievement and Personality a "r" of .09, a standard error of .15, with a "t" of .60 at the one per cent level of donfidence.

Therefore, it is to be noted, that there was a significant positive correlation or relationship between Total Mental Factors and Total Achievement in the obtained scores of these twenty-two educationally retarded pupils. However, there was a slight positive correlation or relationship between Total Mental Factors and Total Personality, Total Achievement and Total Personality, which was not statistically significant at the one per cent level of confidence.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Introductory Statement.--The problem involved in this study was to find the tested differences, if any, in intelligence, academic achievement and personality of normally progressing and educationally retarded seventh-grade pupils enrolled in the Emery Street High School, Dalton, Georgia.

Purposes of the Study.--The major purpose of this research was to get a comprehensive picture of the total maturational status of the "normally progressing" and the "educationally retarded" learners in the Emery Street High School, Dalton, Georgia, 1954-1955 as reflected the significant differences, if any, in the measures of their intelligence, achievement and personality.

More specifically, the purposes of this study were as follows:

1. To determine the central tendency and variability in intelligence, academic achievement, and personality of the normally progressing and educationally retarded pupils in the Emery Street High School.

2. To determine the significant differences, if any, in intelligence, academic achievement, and personality between the group of normally progressing and educationally retarded pupils in the Emery Street High School.

3. To ascertain the correlation, if any, between intelligence and academic achievement, intelligence and personality, and personality and academic achievement for the group of normally progressing pupils in the Emery Street High School.

4. To ascertain the correlation, if any, between intelligence and academic achievement, intelligence and personality, and personality and academic achievement for the group of educationally retarded pupils in the Emery Street High School.

5. To formulate whatever significant implications for educational theory and procedure as may be derived from the analysis and interpretations of the data.

Definition of Terms.--For the purpose of this study the terms which follow carry the meaning ascribed to them:

1. The term, "intelligence," as employed in this study refers to traits as measured by the California Test of Mental Maturity.

2. The term, "personality," as employed in this study refers to behavior as measured by the California Test of Personality.

3. The term, "normally progressing," as employed in this study refers to those pupils of the seventh-grade who have passed from one grade to another each successive year.

4. The term, "educationally retarded," as employed in this study refers to those pupils of the seventh-grade who have been denied promotion at the end of any school term, first through seventh-grade.

Locale and Experimental Design of the Study.--Significant aspects of the Locale and Experimental Design of this research are indicated below.

1. Locale: This study was conducted during the first semester of the school year, 1954, at the Emery Street High School, Dalton, Georgia.

2. Research: The Descriptive-Survey of research was used utilizing the special technique of testing and statistical treatment to collect and interpret the data.

3. Subjects: The subjects used in this study were forty-six seventh-grade pupils. There were twenty-four normally progressing pupils ranging in ages from eleven to twelve years seven months. There were twenty-two educationally retarded pupils ranging in ages from thirteen to sixteen years.

4. The Instruments: The instruments used to collect data were:

   a. The California Short Form Test of Mental Maturity.

   b. The California Test of Personality.

   c. The California Achievement Test.

5. The data obtained from the administration of these tests were tabulated, graphed, treated statistically, evaluated and

interpreted with the results as reported in Chapter III.

6. Criteria of Reliability: The significant differences were referred to Fisher's "t" of 2.58 at the one per cent level of confidence for 44 degrees of freedom; and the correlations were referred to a "t" of 2.69 for 44 degrees of freedom.

Summary of Related Literature.--The literature reviewed has been concerned with intelligence, personality and achievement as it is considered by authorities of the subject. Significant abstracted statements from various writers and authorities are presented below:

Dickens[1] found that children who rated low in intelligence tests were very slow in learning to read.

Hollingworth and Cobb[2] assert that equalization of educational opportunity did not equalize achievement and intelligence.

Eaton[3] revealed in his study that the average students were above the average in ability and the group of English specials were inferior to the group of repeaters in all subjects.

Farley[4] found that non-failing pupils had a higher I. Q. than failing pupils.

Billingslea in his study showed that failing pupils were inferior to

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[1] Charles W. St. John, Educational Achievement in Relations to Intelligence, (Cambridge, 1930), p. 10.

[2] L. S. Hollingworth and M. V. Cobb, Twenty-Seventh Year Book, (Bloomington, 1938), pp. 3-33.

[3] H. F. Eaton, School and Society, XVII (May, 1939-40), p. 96.

[4] Eugene Farley, Nations Schools, Vol. XVIII (October, 1936), pp. 37-39.

[5] E. D. Billingslea, "A Study of the Tested Differences of Failing and Non-Failing Pupils," Unpublished Master's Thesis, School of Education, Atlanta University, (1953), p. 153.

non-failing pupils in achievement and that non-failing pupils were significantly superior to failing pupils in all areas of intelligence with the exoeption of four.

McElwee[1] revealed that pupils who make progress in school seem to possess all of the desirable personality traits to a greater degree than do retarded children. The retarded children were markedly disinterested toward school work.

Norris[2] pointed out that gifted children tend to be superior in character traits and interest as well as ability, and the more superior they are, the more likely they are to make high scores on test of personality.

Lewis[3] states that brilliant pupils were superior to normally progressing pupils in personality and that normally progressing pupils rated higher than retarded ones.

McGhee and Lewis[4] found that mentally retarded children are less well adjusted in personality reactions than mentally superior ones.

Afinson[5] asserts that normally progressing and educationally retarded

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[1]Edna Willis McElwee, "A Comparison of Personality Traits of Three Hundred Accelerated, Normal, and Retarded Children," Journal of Educational Research, XXXII (May, 1932), pp. 31-34.

[2]Ruth Norris, "Personality Ratings of High School Pupils in Relations to their Success in School," School Review, (January, 1940), pp. 30-40.

[3]W. D. Lewis, "Some Characteristics of Children Designated as Problems, Mentally Retarded or as Genius by Teachers," Journal of Genetic Psychology, Vol. 70, (1947), pp. 29-51.

[4]William McGhee and Drayton Lewis, "A Comparison of Certain Personality Characteristics of Mentally Superior and Mentally Retarded Children," Journal of Educational Research, (April, 1942).

[5]R. D. Afinson, "School Progress and Pupil Adjustment," Elementary School Journal, (1941), pp. 507-514.

pupils do not differ appreciably in personality adjustment.

Gouch[1] revealed that socio-economic status has positive relationship to academic achievement and personality inventory scores have a slight negative relationship to achievement.

Sandin[2] disclosed that educationally retarded pupils tend to choose companions from a grade higher than their own and that they showed a general indicative of a less happy life than did the normally progressing pupils.

Goodland[3] found significant differences in social adjustment and personal adjustment between the normally progressing pupils and the educationally retarded group.

Walker[4] found no significant differences between the ascendence-submission and introversion of problem and non-problem children.

Thorpe[5] states that there is a high relationship between good personality and success in life as there is between a degree of intelligence and achievement.

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1 Harrison G. Gouch, "The Relationship of Socio-Economic Status of Personality Inventory and Achievement Tests Scores," Journal of Educational Psychology, XXVI (1944), pp. 527-40.

2 Adolph Sandin, "Social and Emotional Adjustment of Regularly Promoted and Non-Promoted Pupils," Child Development, Monographs, (New York), p. 144.

3 John I. Goodland, "Some Effects of Promotion and Non-Promotion Upon Social and Personal Adjustment of Children," Unpublished Doctor's Dissertation, Department of Education, University of Chicago, (1949).

4 Margret Walker, "A Comparative Study of The Achievement, Intelligence and Personality Traits," Unpublished Master's Thesis, School of Education, (Atlanta University, 1946).

5 Louis P. Thorpe, Personality and Life, (1941), pp. 3-6.

Cohler[1] revealed some relationship between acceleration and relative achievement and a marked relationship between I. Q. of Achievers and Non-Achievers.

St. John[2] showed in his study a positive correlation between I. Q. and educational achievement and that repeaters have lower I. Q.'s than non-repeaters.

Merrill[3] found that children of normal I. Q. averaged slightly better in performance in educational tests than do retarded children.

Keyes[4] revealed that 20 per cent of a large group of repeaters did better after repeating a grade than before and that 39 per cent actually did worse.

Arthur[5] found that after matching a group of non-repeaters on the basis of mental ages that the former learned no more than the latter over a period of two years.

Klan and Branson[6] reported that potential repeaters profited more from promotion, so far as achievement was concerned.

Conner[7] asserted that from a study made by Bayer that bright children handle ideas better and are superior in handling tools.

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[1]Milton J. Cohler, Journal of Educational Psychology, Vol. XXXII, (1941), pp. 603-610.

[2]Charles W. St. John, Havard Studies in Education, (1939), p. 219.

[3]Maude A. Merrill, Common Psychology, (1934), II, pp. 1-100.

[4]Charles H. Keyes, Progress Through the Grades of City Schools, (Columbia University, 1911).

[5]Grace Arthur, Journal of Experimental Education, (December, 1936), pp. 203-205.

[6]Vivian Klan and Ernest Branson, Educational Research Bulletin, (Los Angles City Schools), VII (January, 1929), pp. 6-11.

[7]William L. Conner, "Measuring Ability and Achievement," Review of Educational Research, (January, 1930), pp. 37-39.

Waddell[1] revealed that non-failing pupils are significantly superior to failing pupils in intelligence, personality and achievement.

As reported by Bayer,[2] Cook found that there appear no difference in achievement of failing and non-failing groups tested by him.

BASIC FINDINGS

Organization.--The summary of the basic findings of this research as reported under the test captions of the immediate, separate paragraphs to follow is also depicted in the three summary Tables 115, 116, 117, and 118, pages 218, 225, 232, and 243, respectively.

Findings.--The following findings are drawn directly from the interpretation of the data as collected in this study.

California Test of Mental Maturity
(Sensing Left and Right)
(Tables 1 and 2)

On the California Test of Mental Maturity for the component Sensing Left and Right the following statistical measures were obtained; the normal group, a mean score of 11.12, a median score of 11.5, with a standard deviation of 3.48; and the retarded group, a mean score of 12.14, a median score of 12.21, with a standard deviation of 3.93. The

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1 Sarah Francis Waddell, "A Comparative Study of Failing and Non-Failing Pupils of Brown Summit Elementary School, 1949," Unpublished Master's Thesis, School of Education, Atlanta University, 1951.

2 Phillip A. Bayer, "Conditions That Make Guidance Possible," Review of Educational Research, XII (February, 1942), pp. 29-31.

TABLE 115

SUMMARY OF DATA DERIVED FROM THE RESULTS ON THE CALIFORNIA TEST OF MENTAL MATURITY ADMINISTERED TO TWENTY-FOUR NORMAL AND TWENTY-TWO RETARDED PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Component	Normal			Retarded			Difference Data		
	Mean	S. D.	S. E.M_1	Mean	S. D.	S. E.M_2	Diff. of Mean	S. E. M_1-M_2	"t"
Spatial Relationship	17.75	6.15	1.28	16.95	4.62	1.01	0.08	1.63	0.49
Total Logical Reasoning	9.75	2.61	0.54	8.05	3.03	0.66	1.70	0.85	2.00
Numerical Reasoning	6.75	2.48	0.52	5.96	2.4	0.52	0.79	0.73	1.08
Verbal Concept	13.5	5.28	1.10	10.41	4.08	0.84	3.09	1.38	2.02
Total Mental Factors	47.42	12.55	2.62	40.9	10.6	2.31	6.52	3.49	1.80
Language Factors	22.75	7.41	1.54	17.5	7.59	1.65	5.25	2.25	2.33
Non Language Factors	24.63	6.84	1.53	22.41	5.28	1.17	2.22	1.84	1.2

	Grade Placement	Grade Placement	Difference in Grade Placement
Spatial Relationship	6.0	5.9	0.1
Total Logical Reasoning	4.9	4.1	0.8
Numerical Reasoning	6.5	6.0	0.5
Verbal Concept	6.1	5.8	0.3
Total Mental Factors	6.6	5.3	1.3
Language Factors	5.8	5.1	0.7
Non Language Factors	6.2	5.7	0.5

score of the two groups showed a difference of mean of 1.02, with a standard error of the difference between the means of 1.06, and a "t" of 0.96.

California Test of Mental Maturity
(Manipulation)
(Tables 3 and 4)

On the California Test of Mental Maturity for the component of Manipulation Areas the following statistical measures were obtained; the group of normal pupils, a mean score of 4.58, a median score of 4.05, with a standard deviation of 2.04; and the retarded group, a mean score of 3.78, a median score of 4.00, with a standard deviation of 2.04. The scores of the two groups showed a difference of the mean of 0.80, with a standard error of the difference between the means of 0.60, with a "t" of 1.33.

California Test of Mental Maturity
(Spatial Relationship)
(Tables 5 and 6, Figure 1)

On the California Test of Mental Maturity for the component of Total Spatial Relationship the following measures were obtained; the group of normal pupils, a mean score of 17.75, a median score of 17.00, with a standard deviation of 6.15; and the retarded group, a mean score of 16.95, a median score of 16.37, with a standard deviation of 4.62. The scores of the group showed a difference of the mean of 0.80, with a standard error of the difference between the means of 1.63, a "t" of 0.49.

California Test of Mental Maturity
(Similarities)
(Tables 7 and 8)

On the California Test of Mental Maturity for the component of Similarities the following measures were obtained; the group of normal pupils, a mean score of 4.91, a median score of 4.04, with a standard deviation of 1.42; and the group of retarded pupils, the mean score of 4.14, a median score of 3.97, with a standard deviation of 2.02. The scores of the two groups showed a difference of the mean of 0.77, with a standard error of the difference between the means of 0.52, and a "t" of 1.48.

California Test of Mental Maturity
(Inferences)
(Tables 9 and 10)

On the California Test of Mental Maturity for the component Inferences the following statistical measures were obtained; the group of normal pupils, a mean score of 5.83, a median score of 5.9, with a standard deviation of 2.22; and the group of retarded pupils, a mean score of 4.32, a median score of 4.3, and a standard deviation of 2.16. The scores of the two groups showed a difference of the mean of 1.51, with a standard error of the difference between the means of 0.64, and a "t" of 2.35.

California Test of Mental Maturity
(Total Logical Reasoning)
(Tables 11 and 12, Figure 2)

On the California Test of Mental Maturity for the component Total Logical Reasoning the following statistical measures were obtained; the group of normal pupils, a mean score of 9.75, a median score of 9.6, with a standard deviation of 2.61; and the group of retarded pupils a mean score of 8.05, a median score of 7.5, with a standard deviation of

3.03. The scores of the two groups showed a difference of the mean of 1.70, with a standard error of the difference between the means of 0.85, and a "t" of 2.0.

California Test of Mental Maturity
(Number Series)
(Tables 13 and 14)

On the California Test of Mental Maturity for the component Number Series the following statistical measures were obtained; the group of normal pupils, a mean score of 3.54, a median score of 3.00, with a standard deviation of 2.12; and the group of retarded pupils, a mean score of 2.41, a median score of 2.34, with a standard deviation of 0.63. The scores of the two groups schowed a difference of the mean of 1.13, with a standard error of the difference between the means of 0.46, and a "t" of 2.45.

California Test of Mental Maturity
(Numerical Quality)
(Tables 15 and 16)

On the California Test of Mental Maturity for the component Numerical Quality the following statistical measures were obtained; the normal group, a mean score of 3.5, a median score of 3.3, with a standard deviation of 2.14; and the group of retarded pupils, a mean score of 3.31, a median score of 2.9, with a standard deviation of 2.38. The scores of the two groups showed a difference of the mean 0.19, a standard error of the difference between the means of 0.68, and a "t" of 0.28.

California Test of Mental Maturity
(Total Numerical Reasoning)
(Tables 17 and 18, Figure 3)

On the California Test of Mental Maturity for the component Total Numerical Reasoning the following statistical measures were obtained; the group of normal pupils, a mean score of 6.75, a median score of 6.7, with a standard deviation of 2.48; and the group of retarded pupils, a mean score of 5.96, a median score of 5.72, with a standard deviation of 2.4. The scores of the two groups showed a difference of the mean of 0.79, with a standard error of the difference between the means of 0.73, and a "t" of 1.08.

California Test of Mental Maturity
(Total Verbal Concepts)
(Tables 19 and 20, Figure 4)

On the California Test of Mental Maturity for the component Total Verbal Concepts the following statistical measures obtained were; the group of normal pupils, a mean score of 13.5, a median score of 11.83, with a standard deviation of 5.28; and the group of retarded pupils, a mean score of 10.41, a median score of 9.83, with a standard deviation of 4.08. The scores of the two groups showed a difference of the mean of 3.09, with a standard error of the difference between the means of 1.38, and a "t" of 2.02.

California Test of Mental Maturity
(Total Mental Factors)
(Tables 21 and 22, Figure 5)

On the California Test of Mental Maturity for the component of Total Mental Factors the following statistical measures were obtained; the group of normal pupils, a mean score of 47.42, a median score of 46.5, with a standard deviation of 12.55; and the group of retarded pupils, a

mean score of 40.0, a median score of 40.8, with a standard deviation of 10.6. The scores of the two groups showed a difference of the mean of 6.52, with a standard error of the difference between the means of 3.49, and a "t" of 1.80.

California Test of Mental Maturity
(Total Language Factors)
(Tables 23 and 24, Figure 6)

On the California Test of Mental Maturity for the component of Total Language Factors the following statistical measures were obtained; the group of normal pupils, a mean score of 22.75, a median score of 21.0, with a standard deviation of 7.41; and the group of retarded pupils, a mean score of 17.5, a median score of 15.25, with a standard deviation of 7.59. The scores of the two groups showed a difference of the means of 5.25, with a standard error of the difference between the means of 2.25, and a "t" of 2.33.

California Test of Mental Maturity
(Non-Language Factors)
(Tables 24 and 26, Figure 7)

On the California Test of Mental Maturity for the component Non Language Factors the following statistical measures were obtained; the normal pupils, a mean score of 24.63, a median score of 24.1, with a standard deviation of 6.84; and the group of retarded pupils, a mean score of 22.41, a median score of 22.00, with a standard deviation of 5.28. The scores of the two groups showed a difference of the means of 2.22, with a standard error of the difference between the means of 1.84, and a "t" of 1.2.

California Test of Personality
(Self Reliance)
(Tables 27 and 28)

On the California Test of Personality for the component Self Reliance the following statistical measures were obtained; the normal pupils, a mean score of 8.08, a median score of 7.86, with a standard deviation of 1.72; and the group of retarded pupils, a mean score of 7.68, a median score of 7.86, with a standard deviation of 1.54. The scores of the two groups showed a difference of the means of 0.40, with a standard error of the difference between the means of 0.49, and a "t" of 0.81.

California Test of Personality
(Sense of Personal Worth)
(Tables 29 and 30)

On the California Test of Personality for the component Sense of Personal Worth the following statistical measures were obtained; the normal pupils, a mean of 8.58, a median score of 8.38, with a standard deviation of 1.56; and the group of retarded pupils, a mean score of 7.32, a median score of 7.26, with a standard deviation of 1.96. The scores of the two groups showed a difference of the means of 1.26, with a standard error of the difference between the means of 0.52, and a "t" of 2.26.

California Test of Personality
(Sense of Personal Freedom)
(Tables 31 and 32)

On the California Test of Personality for the component Sense of Personal Freedom the following statistical measures were obtained; the

TABLE 116

SUMMARY OF THE DATA DERIVED FROM THE RESULTS ON THE CALIFORNIA TEST OF PERSONALITY ADMINISTERED TO TWENTY-FOUR NORMAL AND TWENTY-TWO RETARDED SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Component	Normal			Retarded			Difference Data		
	Mean	S. D.	S. E.$_{M_1}$	Mean	S. D.	S. E.$_{M_2}$	Diff. of Mean	S. E. M_1-M_2	"t"
Personal Adjustment	50.5	4.74	0.99	44.23	7.38	1.61	6.27	1.89	3.1
Social Adjustment	57.42	8.9	1.86	52.69	8.25	1.80	4.73	2.58	1.83
Total Adjustment	107.62	11.10	2.31	97.90	12.10	2.64	9.72	3.51	2.76

	Percentile Norm	Percentile Norm	Difference
Personal Adjustment	40	30	10
Social Adjustment	40	30	10
Total Adjustment	40	30	10

group of normal pupils, a mean score of 8.66, a median score of 8.75, with a standard deviation of 2.14; and the group of retarded pupils, a mean score of 7.77, a median score of 7.5, with a standard deviation of 2.22. The scores of the two groups showed a difference of the means of 0.89, with a standard error of the difference between the means of 0.66, and a "t" of 1.34.

California Test of Personality
(Feeling of Belonging)
(Tables 33 and 34)

On the California Test of Personality for the component Feeling of Belonging the following statistical measures were obtained; the group of normal pupils, a mean of 10.58, a median score of 10.55, with a standard deviation of 3.18; and the group of retarded pupils, a mean score of 7.04, a median score of 5.16, with a standard deviation of 3.66. The scores of the two groups showed a difference of the means of 3.54, with a standard error of the difference between the means of 1.02, and a "t" of 3.46.

California Test of Personality
(Withdrawing Tendencies)
(Tables 35 and 36)

On the California Test of Personality for the component Withdrawing Tendencies the following statistical measures were obtained; the group of normal pupils, a mean score of 8.62, a median score of 8.58, with a standard deviation of 1.76; and the group of retarded pupils, a mean score of 5.41, a median score of 5.21, with a standard deviation of 2.46. The scores of the two groups showed a difference of the means of 2.21,

with a standard error of the difference between the means of 0.64, and a "t" of 2.21.

California Test of Personality
(Nervous Symptoms)
(Tables 37 and 38)

On the California Test of Personality for the component Nervous Symptoms the following statistical measures were obtained; the group of normal pupils, a mean score of 6.58, a median score of 7.05, a standard deviation of 2.36; and the group of retarded pupils, a mean score of 8.05, a median score of 9.28, with a standard deviation of 2.90. The scores of the two groups showed a difference of the means of 1.47, with a standard error of the difference between the means of 0.79, and a "t" of 1.86.

California Test of Personality
(Total Personal Adjustment)
(Tables 39 and 40, Figure 8)

On the California Test of Personality for the component Total Personal Adjustment the following statistical measures were obtained; the group of normal pupils, a mean score of 50.5, a median score of 49.0, with a standard deviation of 4.74; and the group of retarded pupils, a mean score of 44.23, a median score of 46.0, with a standard deviation of 7.38. The scores of the two groups showed a difference of the means of 6.27, with a standard error of the difference between the means of 1.89, and a "t" of 3.1.

California Test of Personality
(Social Standards)
(Tables 41 and 42)

On the California Test of Personality for the component Social Standards the following statistical measures were obtained; the group of normal pupils, a mean score of 11.5, a median score of 10.16, with a standard deviation of 1.52; and the group of retarded pupils, a mean score of 9.60, a median score of 9.75, with a standard deviation of 1.96. The scores of the two groups showed a difference of the means of 1.90, with a standard error of the difference between the means of 0.53, and a "t" of 3.58.

California Test of Personality
(Social Skills)
(Tables 43 and 44)

On the California Test of Personality for the component Social Skills the following statistical measures were obtained; the group of normal pupils, a mean score of 8.34, a median score of 8.84, with a standard deviation of 2.16; and the group of retarded pupils, a mean score of 8.14, a median score of 8.61, with a standard deviation of 2.38. The scores of the two groups showed a difference of the means of 0.20, with a standard error of the difference between the means of 0.68, and a "t" of 0.29.

California Test of Personality
(Anti-Social Tendencies)
(Tables 45 and 46)

On the California Test of Personality for the component Anti-Social Tendencies the following statistical measures were obtained; the group of normal pupils, a mean score of 8.34, a median score of 8.84, with a standard deviation of 2.16; and the group of retarded pupils, a mean

score of 8.50, a median score of 9.1, with a standard deviation of 3.60. The scores of the two groups showed a difference of the mean of 0.16, with a standard error of the difference between the means of 0.90, and a "t" of 0.17.

California Test of Personality
(Family Relations)
(Tables 47 and 48)

On the California Test of Personality for the component Family Relations the following statistical measures were obtained; the group of normal pupils, a mean score of 9.59, a median score of 10.0, with a standard deviation of 2.38; and the group of retarded pupils, a mean score of 8.95, a median score of 8.5, with a standard deviation of 2.66. The scores of the two groups showed a difference of the means of 0.64, with a standard error of the difference between the means of 0.75, and a "t" of 0.85.

California Test of Personality
(School Relations)
(Tables 49 and 50)

On the California Test of Personality for the component School Relations the following statistical measures were obtained; the group of normal pupils, a mean score of 9.5, a median score of 9.78, with a standard deviation of 2.52; and the group of retarded pupils, a mean score of 7.59, a median score of 8.37, with a standard deviation of 2.20. The scores of the two groups showed a difference of the means of 1.91, with a standard error of the difference between the means of 0.71, and a "t" of 2.68.

California Test of Personality
(Community Relations)
(Tables 51 and 52)

On the California Test of Personality for the component Community Relations the following statistical measures were obtained; the group of normal pupils, a mean score of 9.66, a median score of 9.83, with a standard deviation of 1.52; and the group of retarded pupils, a mean score of 9.14, a median score of 8.77, with a standard deviation of 1.74. The scores of the two groups showed a difference of the means of 0.42, with a standard error of the difference between the means of 0.50, and a "t" of 0.84.

California Test of Personality
(Total Social Adjustment)
(Tables 53 and 54, Figure 9)

On the California Test of Personality for the component Total Social Adjustment the following statistical measures were obtained; the group of normal pupils, a mean score of 57.42, a median score of 58.79, with a standard deviation of 8.9; and the group of retarded pupils, a mean score of 52.69, a median score of 55.21, with a standard deviation of 8.25. The scores of the two groups showed a difference of the means of 4.73, with a standard error of the difference between the means of 2.58, and a "t" of 1.83.

California Test of Personality
(Total Adjustment)
(Tables 55 and 56, Figure 10)

On the California Test of Personality for the component Total Adjustment the following statistical measures were obtained; the group of normal pupils, a mean score of 107.62, a median score of 107.8, with a

standard deviation of 11.10; and the group of retarded pupils, a mean score of 97.90, a median score of 99.78, with a standard deviation of 12.10. The scores of the two groups showed a difference of the means of 9.72, with a standard error of the difference between the means of 3.51, and a "t" of 2.76.

California Achievement Test
(Mathematics)
(Tables 57 and 58)

On the California Achievement Test for the component Mathematics the following statistical measures were obtained; the group of normal pupils, a mean score of 11.67, a median score of 10.64, with a standard deviation of 3.66; and the group of retarded pupils, a mean score of 9.32, a median score of 9.17, with a standard deviation of 3.82. The scores of the two groups showed a difference of the means of 2.35, with a standard error of the difference between the means of 1.12, and a "t" of 2.09.

California Achievement Test
(Science)
(Tables 59 and 60)

On the California Achievement Test for the component Science the following statistical measures were obtained; the group of normal pupils, a mean score of 10.33, a median score of 10.00, with a standard deviation of 3.26; and for the retarded pupils, a mean score of 7.05, a median score of 6.61, with a standard deviation of 2.50. The scores of the two groups showed a difference of the means of 3.28, with a standard error of the difference between the means of 0.88, and a "t" of 3.71.

California Achievement Test
(Social Science)
(Tables 61 and 62)

TABLE 117

SUMMARY OF THE DATA DERIVED FROM THE RESULTS ON THE CALIFORNIA ACHIEVEMENT TEST ADMINISTERED TO TWENTY-FOUR NORMAL AND TWENTY-TWO RETARDED SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Component	Normal			Retarded			Difference Data		
	Mean	S. D.	S. E.$_{M_1}$	Mean	S. D.	S. E.$_{M_2}$	Diff of Mean	S. E. M_1-M_2	"t"
Total Reading Vocabulary	39.71	8.90	1.85	29.95	10.10	2.20	9.76	2.88	3.38
Total Reading Comprehension	22.5	6.63	1.38	17.09	4.32	0.94	5.41	1.67	3.24
Total Arithmetic Reasoning	20.63	5.28	1.1	16.14	2.4	0.52	4.49	1.22	3.68
Total Arithmetic Fundamental	20.75	5.95	1.24	16.09	4.40	0.96	4.66	1.56	2.99
Total Language	56.58	11.45	2.38	44.27	9.60	2.09	12.31	3.16	3.89
Total Spelling	18.04	6.10	1.27	11.09	4.9	1.07	6.95	1.66	4.18
Total Test	175.70	30.60	6.37	140.41	22.70	4.93	35.29	8.05	4.38

	Grade Placement	Grade Placement	Difference in Grade Plm't
Total Reading Vocabulary	6.1	5.2	0.9
Total Reading Comprehension	4.8	3.5	0.7
Total Arithmetic Reasoning	6.8	6.3	0.5
Total Arithmetic Fundamental	5.0	4.7	0.3
Total Language	7.7	6.5	1.2
Total Spelling	8.6	6.8	1.8
Total Test	6.5	5.7	0.8

On the California Achievement Test for the component Social Science the following statistical measures were obtained; the group of normal pupils, a mean score of 8.92, a median score of 8.36, with a standard deviation of 3.82; and for the retarded pupils, a mean score of 6.68, a median score of 5.79, with a standard deviation of 3.70. The scores of the two groups showed a difference of the means of 2.24, with a standard error of the difference between the means of 1.13, and a "t" of 1.97.

California Achievement Test
(General Vocabulaty)
(Tables 63 and 64)

On the California Achievement Test for component General Vocabulary the following statistical measures were obtained; the group of normal pupils, a mean score of 9.58, a median score of 9.21, with a standard deviation of 3.22; and the retarded pupils, a mean score of 6.45, a median score of 6.64, with a standard deviation of 2.88. The scores of the two groups showed a difference of the means of 3.13, with a standard error of the difference between the means of 0.90, and a "t" of 3.47.

California Achievement Test
(Total Reading Vocabulary)
(Tables 65 and 66, Figure 11)

On the California Achievement Test for component Total Reading Vocabulary the following statistical measures were obtained; the group of normal pupils, a mean score of 39.71, a median score of 36.64, with a standard deviation of 8.90; and the retarded pupils, a mean score of 29.95, a median score of 29.5, with a standard deviation of 10.10. The scores of the two groups showed a difference of the means of 9.76, with a standard error of the difference between the means of 2.88, and a "t"

of 3.38.

California Achievement Test
(Following Directions)
(Tables 67 and 68)

On the California Achievement Test for component Following Directions the following statistical measures were obtained; the group of normal pupils, a mean score of 4.33, a median score of 4.23, with a standard deviation of 1.72; and the group of retarded pupils, a mean score of 3.77, a median score of 3.3, with a standard deviation of 1.02. The scores of the two groups showed a difference of the means of 0.56, with a standard error of the difference between the means of 0.42, and a "t" of 1.33.

California Achievement Test
(Reference Skills)
(Tables 69 and 70)

On the California Achievement Test for the component Reference Skills the following statistical measures were obtained; the group of normal pupils, a mean score of 6.58, a median score of 6.28, with a standard deviation of 2.62; and the group of retarded pupils, a mean score of 4.14, a median score of 4.7, with a standard deviation of 2.72. The scores of the two groups showed a difference of the means of 2.44, with a standard error of the difference between the means of 0.80, and a "t" of 3.05.

California Achievement Test
(Interpretation Skill)
(Tables 71 and 72)

On the California Achievement Test for the component Interpretation Skill the following statistical measures were obtained; the group of

normal pupils, a mean score of 11.42, a median score of 11.5, with a standard deviation of 3.46; and the group of retarded pupils, a mean score of 9.04, a median score of 8.64, with a standard deviation of 3.42. The scores of the two groups showed a difference of the means of 2.38, with a standard error of the difference between the means of 1.03, and a "t" of 2.31.

California Achievement Test
(Total Reading Comprehension)
(Tables 73 and 74, Figure 12)

On the California Achievement Test for the component Total Reading Comprehension the following statistical measures were obtained; the group of normal pupils, a mean of 22.5, a median score of 20.5, with a standard deviation of 6.63; and the group of retarded pupils, a mean score of 17.09, a median score of 14.93, with a standard deviation of 4.32. The scores of the two groups showed a difference of the means of 5.41, with a standard error of the difference between the means of 1.67, and a "t" of 3.24.

California Achievement Test
(Number Concept)
(Tables 75 and 76)

On the California Achievement Test for the component Number Concept the following statistical measures were obtained; the group of normal pupils, a mean score of 7.75, a median score of 7.83, with a standard deviation of 1.7; and the group of retarded pupils, a mean score of 4.86, a median score of 4.83, with a standard deviation of 1.66. The scores of the two groups showed a difference of the mean of 2.89, with a standard error of the differance between the means of 0.51, and a "t" of

5.76.

California Achievement Test
(Symbols and Rules)
(Tables 77 and 78)

On the California Achievement Test for component Symbols and Rules the following statistical measures were obtained; the group of normal pupils, a mean score of 4.63, a median score of 4.58, with a standard deviation of 1.5; and the group of retarded pupils, a mean score of 3.95, a median score of 3.75, with a standard deviation of 2.02. The scores of the two groups showed a difference of the means of 0.68, with a standard error of the difference between the means of 0.53, and a "t" of 1.28.

California Achievement Test
(Numbers and Equations)
(Tables 79 and 80)

On the California Achievement Test for component Numbers and Equations the following statistical measures were obtained; the group of normal pupils, a mean score of 3.17, a median score of 3.17, with a standard deviation of 1.30; and the group of retarded pupils, a mean score of 3.32, a median score of 2.95, with a standard deviation of 1.86. The scores of the two groups showed a difference of the means of 0.15, with a standard error of the difference between the means of 0.49, and a "t" of 0.30.

California Achievement Test
(Problems)
(Tables 81 and 82)

On the California Achievement Test for the component Problems the following statistical measures were obtained; the group of normal pupils, a mean score of 5.05, a median score of 4.5, with a standard deviation

of 2.9; the group of retarded pupils, a mean score of 3.14, a median score of 3.06, with a standard deviation of 1.74. The scores of the two groups showed a difference of the means of 1.94, with a standard error of the difference between the means of 0.71, and a "t" of 2.73.

California Achievement Test
(Total Arithmetic Reasoning)
(Tables 83 and 84, Figure 13)

On the California Achievement Test for the component Total Arithmetic Reasoning the following statistical measures were obtained; the group of normal pupils, a mean score of 20.63, a median score of 19.64, a standard deviation of 5.28; and the group of retarded pupils, a mean score of 16.14, a median score of 16.21, with a standard deviation of 2.4. The scores of the two groups showed a difference of the means of 4.49, with a standard error of the difference between the means of 1.22, and a "t" of 3.68.

California Achievement Test
(Addition)
(Tables 85 and 86)

On the California Achievement Test for the component Addition the following statistical measures were obtained; the group of normal pupils, a mean score of 10.58, a median score of 10.67, with a standard deviation of 1.66; and the group of retarded pupils, a mean score of 7.86, a median score of 7.5, with a standard deviation of 2.78. The scores of the two groups showed a difference of the means of 2.72, with a standard error of the difference between the means of 0.70, and a "t" of 3.88.

California Achievement Test
(Subtraction)
(Tables 87 and 88)

On the California Achievement Test for the component Subtraction the following statistical measures were obtained; the group of normal pupils, a mean score of 8.83, a median score of 8.83, with a standard deviation of 1.68; and the group of retarded pupils, a mean score of 6.23, a median score of 6.39, with a standard deviation of 2.34. The scores of the two groups showed a difference of the means of 2.60, with a standard error of the difference between the means of 0.61, and a "t" of 4.19.

California Achievement Test
(Multiplication)
(Tables 89 and 90)

On the California Achievement Test for the component Multiplication the following statistical measures were obtained; the group of normal pupils, a mean score of 8.83, a median score of 8.95, with a standard deviation of 2.98; and the group of retarded pupils, a mean score of 7.17, a median score of 6.83, with a standard deviation of 2.94. The scores of the two groups showed a difference of the means of 1.69, with a standard error of the difference between the means of 0.89, and a "t" of 1.89.

California Achievement Test
(Division)
(Tables 91 and 92)

On the California Achievement Test for the component Division the following statistical measures were obtained; the group of normal pupils, a mean score of 8.45, a median score of 9.3, with a standard deviation of 2.52; and the group of retarded pupils, a mean score of 6.96, a median score of 7.72, with a standard deviation of 2.76. The scores of the two groups showed a difference of the means of 1.49, with a standard

error of the difference between the means of 0.80, and a "t" of 1.86.

California Achievement Test
(Total Arithmetic Fundamentals)
(Tables 93 and 94, Figure 14)

On the California Achievement Test for the component Total Arithmetic Fundamentals the following statistical measures were obtained; the group of normal pupils, a mean score of 20.75, a median score of 18.67, with a standard deviation of 5.95; and the group of retarded pupils, a mean score of 16.09, a median score of 16.5, with a standard deviation of 4.40. The scores of the two groups showed a difference of the means of 4.66, with a stamdard error of the difference between the means of 1.56, and a "t" of 2.99.

California Achievement Test
(Capitalization)
(Tables 95 and 96)

On the California Achievement Test for the component Capitalization the following statistical measures were obtained; the group of normal pupils, a mean score of 9.09, a median score of 9.7, with a standard deviation of 2.68; and the group of retarded pupils, a mean score of 7.68, a median score of 7.83, with a standard deviation of 3.12. The scores of the two groups showed a difference of the means of 1.41, with a standard error of the difference between the means of 0.87, and a "t" of 1.62.

California Achievement Test
(Punctuation)
(Tables 97 and 98)

On the California Achievement Test for the component Punctuation the following statistical measures were obtained; the group of normal pupils,

a mean score of 7.21, a median score of 6.5, with a standard deviation of 3.04; and the group of retarded pupils, a mean score of 5.5, a median score of 5.19, with a standard deviation of 1.64. The scores of the two groups showed a difference of the means of 1.71, with a standard error of the difference between the means of 0.72, and a "t" of 2.37.

California Achievement Test
(Words and Sentences)
(Tables 99 and 100)

On the California Achievement Test for the component Words and Sentences the following statistical measures were obtained; the group of normal pupils, a mean score of 12.75, a median score of 12.64, with a standard deviation of 2.90; and the group of retarded pupils, a mean score of 11.23, a median score of 11.78, with a standard deviation of 2.86. The scores of the two groups showed a difference of the means of 1.52, with a standard error of the difference between the means of 0.86, and a "t" of 1.76.

California Achievement Test
(Parts of Speech)
(Tables 101 and 102)

On the California Achievement Test for the component Parts of Speech the following statistical measures were obtained; the group of normal pupils, a mean score of 9.33, a median score of 9.94, with a standard deviation of 2.82; and the group of retarded pupils, a mean score of 6.05, a median score of 7.21, a standard deviation of 2.02. The scores of the two groups showed a difference of means of 3.28, with a standard error of the difference between the means of 0.73, and a "t" of 4.49.

California Achievement Test
(Spelling)
(Tables 103 and 104, Figure 15)

On the California Achievement Test for component Spelling the following statistical measures were obtained; the group of normal pupils, a mean score of 18.04, a median score of 18.25, with a standard deviation of 6.10; and the group of retarded pupils, a mean score of 11.09, a median score of 10.05, with a standard deviation of 4.9. The scores of the two groups showed a difference of the means of 6.95, with a standard error of the difference between the means of 1.66, and a "t" of 4.24.

California Achievement Test
(Total Language)
(Tables 105 and 106, Figure 16)

On the California Achievement Test for component Total Language the following statistical measures were obtained; the group of normal pupils, a mean score of 56.58, a median score of 56.5, with a standard deviation of 11.45; and the group of retarded pupils, a mean score of 44.27, a median score of 45.33, with a standard deviation of 9.60. The scores of the two groups showed a difference of the means of 12.31, with a standard error of the difference between the means of 3.16, and a "t" of 3.88.

California Achievement Test
(Total Achievement)
(Tables 107 and 108, Figure 17)

On the California Achievement Test for component Total Achievement the following statistical measures were obtained; the group of normal pupils, a mean score of 175.70, a median score of 183.5, with a standard deviation of 30.60; and the group of retarded pupils, a mean score of

140.41, a median score of 135.21, with a standard deviation of 22.70. The score of the two groups showed a difference of the means of 35.29, with a standard error of the difference between the means of 8.05, and a "t" of 4.38.

Correlations (Table 113)

Correlations derived from the results on the California Test of Mental Maturity, the California Achievement Test, and the California Personality Test for twenty-four normally progressing pupils the following statistical measures were obtained; The Total Mental Factors and Total Achievement a "r" of 0.63, a standard error of "r" of .15, with a "t" of 4.20, at the one per cent level of confidence, which was significant; the Total Mental Factors and Personality a "r" of -.34, a standard error of 2.37 at the one per cent level of confidence, which was not significant; the Total Achievement and Personality a "r" of -.34, a standard error of .15, with a "t" of 2.37 at the one per cent level of confidence, which was not significant.

Correlations (Table 114)

Correlations derived from the results on the California Test of Mental Maturity, the California Achievement Test, and the California Personality Test for twenty-two educationally retarded pupils the following statistical measures were obtained; The Total Mental Factors and Total Achievement a "r" of .50, a standard error of "r" of .15, with a "t" of 3.33 at the one per cent level of confidence, which was significant; the Total Mental Factors and the Total Personality a "r" of .05,

TABLE 118

SUMMARY OF THE CORRELATIONS DATA DERIVED FROM THE RESULTS ON THE CALIFORNIA TEST OF MENTAL MATURITY, CALIFORNIA TEST OF PERSONALITY, AND THE CALIFORNIA ACHIEVEMENT TEST ADMINISTERED TO TWENTY-FOUR NORMAL AND TWENTY-TWO RETARDED SEVENTH-GRADE PUPILS OF THE EMERY STREET HIGH SCHOOL, DALTON, GEORGIA, 1954-1955.

Variable	Normal			Retarded			Difference Data		
	r	SEr	"t"	r	SEr	"t"	r	SEr	"t"
Total Mental Factors and Total Achievement	.63	.15	4.20	.50	.15	3.33	.13	0.00	.87
Total Mental Factors and Total Personality	-.34	.15	2.37	.05	.15	.33	.29	0.00	2.04
Total Achievement and Total Personality	-.34	.15	2.37	.09	.15	.60	.25	0.00	1.77

a standard error of .15, with a "t" of .33 at the one per cent level of confidence, which was not significant; the Total Achievement and Personality a "r" of .09, a standard error of .15, with a "t" of .60 at the one per cent level of confidence.

AREA OF SIGNIFICANT DIFFERENCES

Summary of Area Showing or not Showing Significant Differences.--The summation of the data on "significant differences" and "non-significant differences" between the group of normally progressing and educationally retarded pupils of the Emery Street High School, as revealed on the respective components of the tests of Intelligence, Personality, and Achievement is as follows:

1. The California Test of Mental Maturity revealed no statistically significant differences between the normal and retarded pupils on the components: Spatial Relationships, Logical Reasoning, Numerical Reasoning, Verbal Concepts, Language Factors, Non-Language Factors, and Total Mental Factors.
2. The California Test of Personality revealed a statistically significant difference between the normal and retarded pupils on the components: Feeling of Belonging, Withdrawing Tendencies, Total Personal Adjustment, Social Standards, School Relations, and Total Adjustment. There was no statistically significant differences revealed between the normal and retarded pupils on the components: Self Reliance, Sense of Personal Worth, Sense of Personal Freedom, Nervous Symptoms, Social Skills, Family Relations, Community Relations, and Total Social Adjustment.

3. The California Achievement Tests revealed a statistically significant difference between the normal and retarded pupils on the components: Science, General Vocabulary, Total Reading Vocabulary, Reference Skills, Total Reading Comprehension, Number Concept, Problems, Total Arithmetic Reasoning, Addition, Subtraction, Arithmetic Fundamentals, Parts of Speech, Spelling, Total Language, and Total Achievement. There was no statistically significant difference between the normal and retarded pupils on the components: Mathematics, Social Science, Following Directions, Interpretations, Number Concept, Symbols and Rules, Number and Equations, Multiplication, Division, Capitalization, Punctuation, and Words and Sentences.

AREAS OF SIGNIFICANT CORRELATIONS

Summary of Area Showing or not Showing Significant Differences.--The summation of the data, grouped as "significant differences" and "non-significant differences," between the group of normally progressing pupils and the group of educationally retarded pupils, as revealed on the tests of Intelligence, Personality and Achievement is as follows:

1. There was a significant positive correlation or relationship between Total Mental Factors and Total Achievement in the obtained scores of both groups.
2. There was a negative non-significant correlation between Total Mental Factors and Total Personality, Total Achievement and Total Personality in the obtained scores of the normally progressing pupils, but a slight positive correlation in the

obtained scores of the educationally retarded pupils, which was not statistically significant.

Conclusions.--The findings of this study weem to warrant the following conclusions:

1. The data seem to warrant the conclusion that the group of normally progressing pupils and the group of educationally retarded pupils were experiencing some what the same level of mental development as measured by the California Test of Mental Maturity.
2. The data seem to warrant the conclusion that the group of normally progressing pupils was experiencing a higher level of desirable personality maturity than in the educationally retarded pupils, except in the area of social adjustment as measured by the California Test of Personality.
3. The data seem to warrant the conclusion that the group of normally progressing pupils was achieving a statistically higher level of academic accomplishment than was the group of educationally retarded pupils as measured by the California Achievement Test.

Implications.--The implications for educational theory and practice that grew out of this study are given below.

1. That there are other factors involved in retardation other than the level of intelligence of the learner. Therefore, any grouping of the learners for instructional purposes should inquire into other factors other than intelligence, such as (1) methods of instructions, (2) "the educational climate" of the school, (3) the motivation of the individual learner and (4) perhaps

certain aspects of the socio-economic background of the learners.

2. It would appear that "time spent" in the learning experiences is not a factor in the ultimate over all achievement of the learner; for these data indicated that those pupils who spent normal or less than normal time in grades achieved a higher level of school accomplishment. Here, again, is evidence that the mere repeating of a class does not result in a higher level of achievement for the learner.
3. It would appear from the data that the educational program of a school should provide fullest opportunity for the individual learner to experience successful performance, if the fullest development of personality traits is to be expected. On the other hand, it would appear that successful school performance is a predominate influence in the social development of the learner.
4. It would appear that the school must provide a climate of success, regardless of the intellectual level of the learners, if all of the learners are to be expected to reach a desirable level of development in mental, social emotional aspects of being.

Recommendations.--The findings of this research appear to justify the recommendations to follow.

1. The Emery Street High School should give serious thought to the grouping of its pupils with reference to such motivating factors of learning as: (a) late entrance into school, (b) irregular attendance, (c) teaching methodology, (d) home influences, which might enter into the educational retardation of its pupils.
2. That the Emery Street High School might give serious thought to

providing curricular and extra-curricular experiences in and through which the pupils may gain a full measure of satisfaction and success as a basis for higher level of social competence and maturity.

3. Inspite of administrative procedures and practices, the staff of the Emery Street High School might well consider the feasibility and fruitfulness of inaugurating some type of program for accelerated school progression of both the normally progressing the educationally retarded pupils; for only in this way can all pupils be expected to attain their fullest development.

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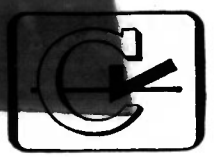
APPENDIX



Intermediate • GRADES 7-10, ADULT • 1950 S-Form

California Short-Form Test of Mental Maturity

Devised by

ELIZABETH T. SULLIVAN, WILLIS W. CLARK, AND ERNEST W. TIEGS

INSTRUCTIONS TO EXAMINEES:

This is a test of mental maturity. In taking it you will show how well you understand relationships and what you do when you face new problems. No one is expected to do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

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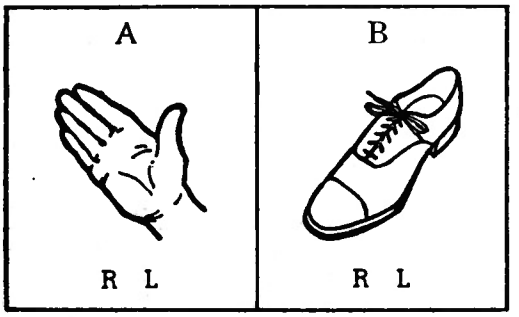
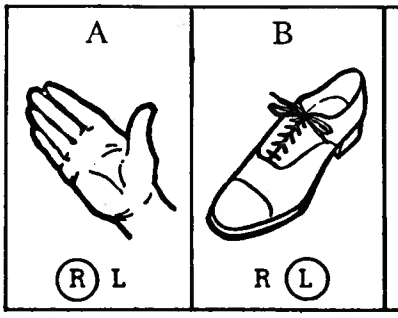
DIRECTIONS: Mark as you are told the letter, R, for each picture that shows a right; mark the letter, L, for each picture that shows a left.

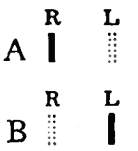
Samples A and B



Correct Test Booklet Marks



Correct Answer Sheet Marks



TEST 1

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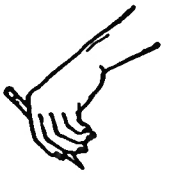
3 R L

4 R L



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7 R L

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9 R L

10 R L

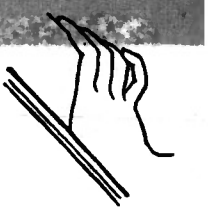
11 R L

12 R L

13 R L

14 R L

15 R L



16 R L

17 R L

18 R L

19 R L

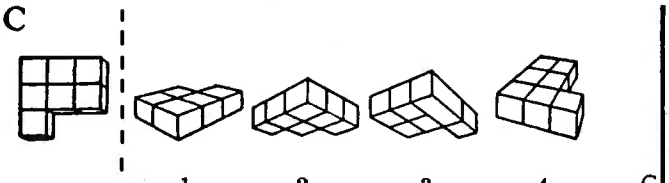
20 R L

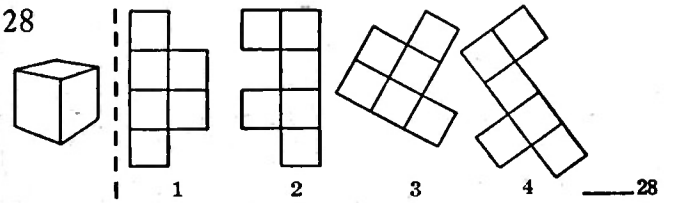
STOP NOW WAIT FOR FURTHER INSTRUCTIONS

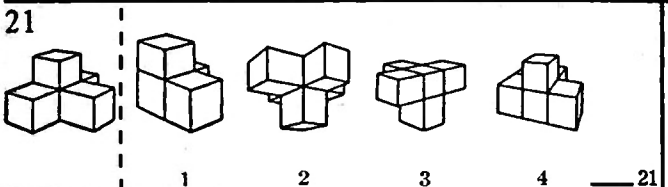
Test 1 Score
(number right).....

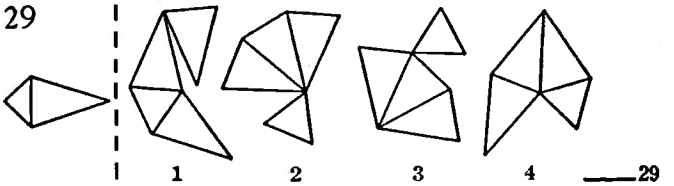
DIRECTIONS: In each row find the drawing that is a different view of the first drawing. Mark its number as you are told.

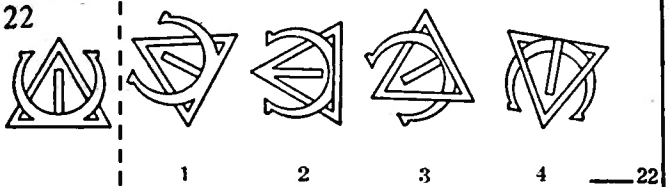
TEST 2

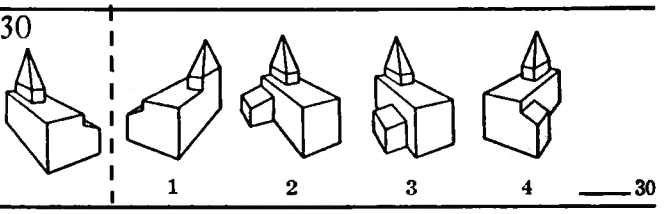
C  1 2 3 4 ___C

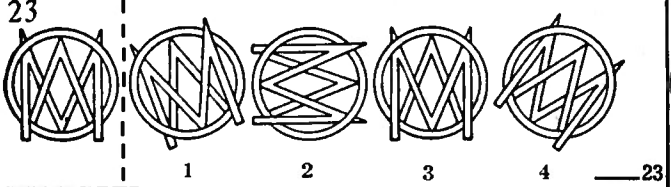
28  1 2 3 4 ___28

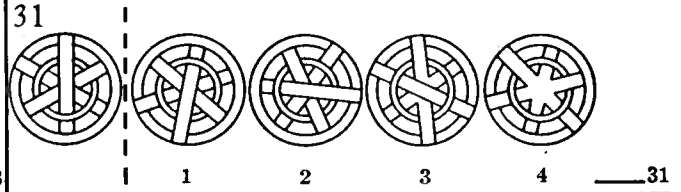
21  1 2 3 4 ___21

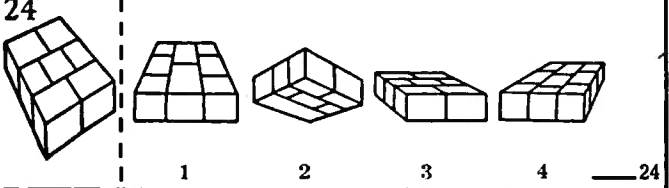
29  1 2 3 4 ___29

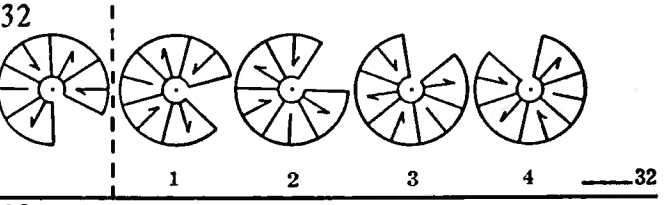
22  1 2 3 4 ___22

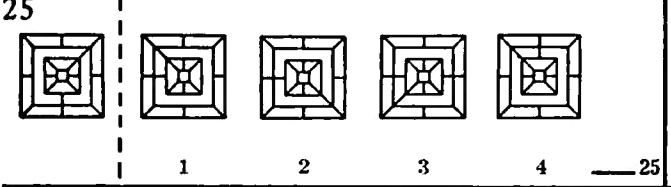
30  1 2 3 4 ___30

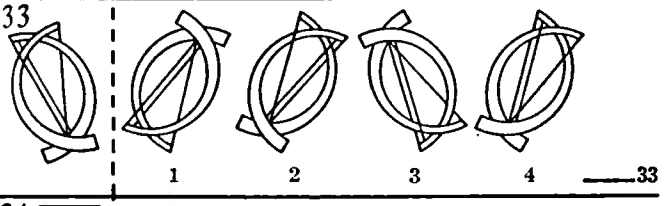
23  1 2 3 4 ___23

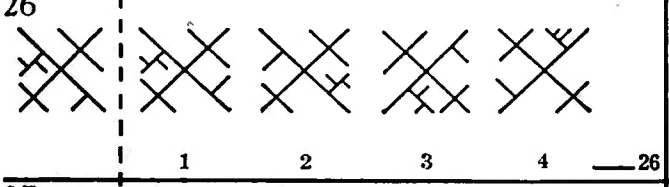
31  1 2 3 4 ___31

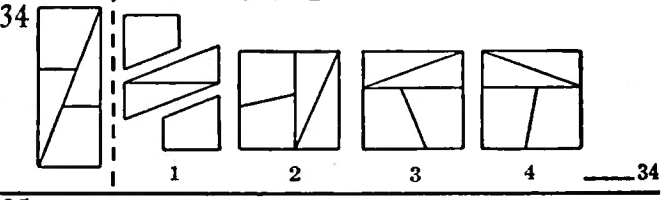
24  1 2 3 4 ___24

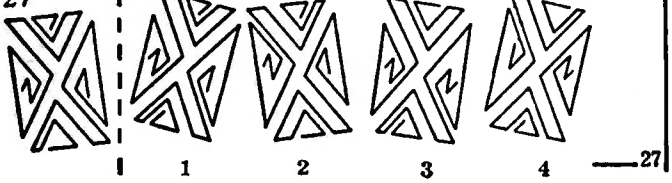
32  1 2 3 4 ___32

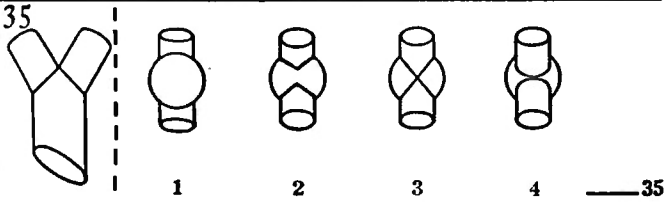
25  1 2 3 4 ___25

33  1 2 3 4 ___33

26  1 2 3 4 ___26

34  1 2 3 4 ___34

27  1 2 3 4 ___27

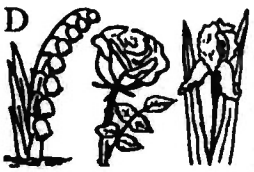
35  1 2 3 4 ___35

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 2 Score (number right).....

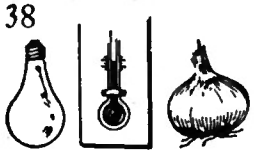
DIRECTIONS: The first three pictures in each row are alike in some way. Decide how they are alike, and then find the one picture among the four to the right of the dotted line that is most like them and mark its number.

TEST 3

D  1 2 3 4 ___D

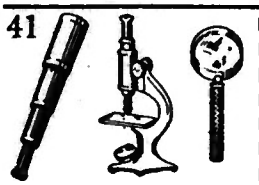
36  1 2 3 4 ___36

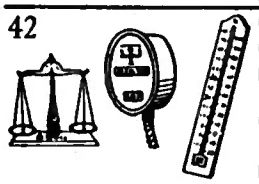
37  1 2 3 4 ___37

38  1 2 3 4 ___38

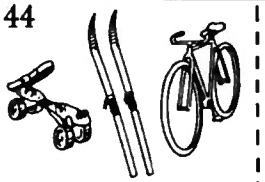
39  1 2 3 4 ___39

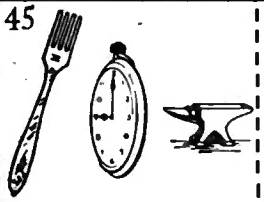
40  1 2 3 4 ___40

41  1 2 3 4 ___41

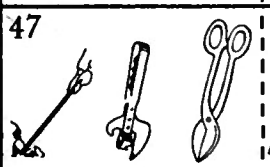
42  1 2 3 4 ___42

43  1 2 3 4 ___43

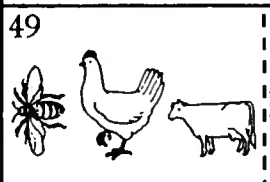
44  1 2 3 4 ___44

45  1 2 3 4 ___45

46  1 2 3 4 ___46

47  1 2 3 4 ___47

48  1 2 3 4 ___48

49  1 2 3 4 ___49

50  1 2 3 4 ___50

STOP

Test 3 Score
(number right) .....

DIRECTIONS: Read each group of statements below and the conclusions which follow. Then mark as you are told the number of each answer you have decided is correct.

TEST 4

E. All four-footed creatures are animals.

All horses are four-footed.

Therefore

1 Creatures other than horses can walk
2 All horses can walk
3 All horses are animals ——E

51. Mr. X is an aviator.

Mr. X is scoutmaster for his home town.

Therefore

1 Aviators make good scoutmasters
2 One aviator is a scoutmaster
3 Scoutmasters make good aviators ——51

52. Three boys are on a mountain trail.

Dick is farther up the trail than Dan.

Frank is farther up than Dick.

Which boy is in the middle position on the trail?

1 Dick
2 Dan
3 Frank ——52

53. No human beings are exempt from accidents.

Automobile drivers are human beings.

Therefore

1 No human being is dependable
2 No automobile drivers are exempt from accidents
3 Few human beings make safe automobile drivers ——53

54. If he remains with his friend he will suffer loss, and if he leaves his friend he will suffer loss.

But, he must remain with his friend or leave him.

Therefore

1 He should remain with his friend
2 It takes courage to leave a friend
3 He will suffer loss ——54

55. All squares have four equal sides.

This figure does not have four equal sides.

Therefore

1 It is a circle
2 It is not a square
3 It is either a triangle or a rectangle ——55

56. He is either foreign-born or a native.

But, he is not foreign-born.

Therefore

1 He is a voter
2 He is a native
3 He is a soldier ——56

57. Pine Street is parallel to River Drive.

River Drive is parallel to Cypress Street.

Therefore

1 Pine Street is east of River Drive
2 Cypress Street crosses Pine Street
3 Pine Street is parallel to Cypress Street ——57

GO RIGHT ON TO THE NEXT PAGE

58. Either your sister is more intelligent than you, or as intelligent, or less intelligent.

But, your sister is not more intelligent, nor is she less intelligent.

Therefore

1 Your sister is less intelligent than you
2 Your sister is as intelligent as you
3 Your sister is more intelligent than you ____58

59. Jim has a better batting average than Ed.

Ed has a better batting average than Bill.

Who has the best batting average?

1 Jim
2 Bill
3 Ed ____59

60. A weighs less than B.

B weighs less than C.

Therefore

1 B weighs more than C
2 A's weight equals B's and C's
3 A weighs less than C ____60

61. The box contains either gold or silver or crystal.

It does not contain silver.

Therefore

1 It contains crystal
2 It contains either gold or crystal
3 The conclusion is uncertain ____61

62. If he is to keep his place on the team he must avoid disputes with the captain and the coach.

But, he will neither avoid disputes with the captain, nor will he avoid disputes with the coach.

Therefore

1 He will not remain on the team
2 He will lose in popularity with the school
3 He may have a reasonable complaint ____62

63. If the claim is unjust, refusal to permit its discussion before the Student Council is unwise.

If the claim is just, refusal is inexcusable.

But, the claim is either unjust or it is just.

Therefore

1 The refusal is justified
2 The refusal is being discussed freely
3 The refusal is either unwise or inexcusable ____63

64. A's house is situated northeast of B's.

B's house is situated northeast of C's.

Therefore

1 A's house is situated nearest to C's
2 C's house is nearer to A's house than to B's
3 A's house is situated to the northeast of C's ____64

65. W is between X and Y.

X is between Y and Z.

Therefore

1 W is not between Y and Z
2 W is between X and Z
3 W is nearer to X than to Z ____65

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 4 Score
(number right).....

DIRECTIONS: In each row of numbers below, there is one that does not belong. Find the number that should be omitted from each row among the answer numbers on the right, and mark its letter as you are told. When you have finished as many as you can from 66 to 75, read the Directions in the middle of the page and proceed with rows 76 to 80.

TEST 5.

F.	2	4	6	8	9	10	12	14				a 6 b 9 c 10 d 12 e 14	—— F
(66).	14	12	10	8	7	6	4					a 14 b 12 c 10 d 8 e 7	—— 66
(67).	19	16	13	11	10	7	4					a 13 b 11 c 10 d 7 e 4	—— 67
(68).	1	5	9	13	15	17						a 15 b 13 c 9 d 5 e 1	—— 68
(69).	4	5	7	8	10	11	12	13				a 7 b 8 c 11 d 12 e 13	—— 69
(70).	2	4	5	7	8	9	10	11	13	14		a 2 b 4 c 9 d 10 e 13	—— 70
(71).	0	7	14	19	24	27	29	30	31			a 29 b 27 c 24 d 14 e 0	—— 71
(72).	20	17	15	14	11	9	8	7	5	3	2	a 17 b 14 c 9 d 7 e 5	—— 72
(73).	21	20	18	15	14	12	10	9	8	6	3	a 21 b 10 c 9 d 8 e 6	—— 73
(74).	2	3	5	8	12	17	22	23	30			a 3 b 8 c 12 d 17 e 22	—— 74
(75).	20	18	19	17	18	16	17	14	15	16		a 20 b 19 c 17 d 14 e 16	—— 75

DIRECTIONS: Go right on with the following until told to stop. In each row of numbers below, the numbers grow larger or smaller in a regular series of whole numbers. Decide what numbers are missing, find them among the answers on the right, and mark the letter of your choice for the correct answer.

X.	12	.....	14	15	.....	.....	18	a 13, 15, 16 b 13, 15, 17 c 13, 16, 17 d 14, 16, 17 e 15, 16, 18 — C X

(In Sample X the correct answer is C, meaning 13, 16, 17.)

(76).	1	4	.....	10	.....	.....	19	a 5, 11, 18 b 7, 13, 16 c 5, 13, 16 d 7, 11, 18 e 5, 16, 18 —— 76
(77).	2	.....	8	.....	32	.....		a 7, 13, 33 b 4, 16, 37 c 3, 15, 48 d 4, 16, 64 e 6, 24, 64 —— 77
(78).	44	37	.....	.....	16	.....	2	a 30, 22, 8 b 31, 22, 9 c 30, 23, 9 d 30, 21, 9 e 31, 23, 8 —— 78
(79).	6	.....	28	.....	50	.....	72	a 16, 38, 60 b 16, 39, 61 c 17, 38, 60 d 11, 39, 61 e 17, 39, 61 —— 79
(80).	83	70	.....	44	.....	.....	5	a 57, 31, 18 b 53, 33, 23 c 57, 33, 19 d 53, 31, 18 e 57, 33, 19 —— 80

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 5 Score (number right).....

DIRECTIONS: Work these problems on a sheet of scratch paper. Mark as you are told the letter of each correct answer.

TEST 6.

G. If you earned $5.00 and spent $3.00, how many dollars would you have left?

a $1.00
b $2.00
c $3.00
d $5.00 ——G

---

81. If a freight train travels at the rate of 20 miles an hour, how many miles will it travel in 4 hours?

a 5
b 24
c 80
d 60 ——81

---

82. How many pieces of candy can you buy for 15 cents at the rate of 4 for 5 cents?

a 9
b 12
c 15
d 60 ——82

---

83. On a road map each one-half inch represents 20 miles. How many miles are represented by 5 inches?

a 10
b 20
c 100
d 200 ——83

---

84. Large envelopes that sell for 3 cents each can be had for 30 cents a dozen. How much is saved when bought by the dozen?

a 10¢
b 6¢
c 2½¢
d 9¢ ——84

---

85. How many one-inch cubes can be placed in a box 5 inches long, 4 inches wide, and 3 inches high?

a 12
b 23
c 60
d 100 ——85

---

86. If you had 20 words in spelling and were marked 90%, how many words did you spell correctly?

a 1
b 11
c 18
d 19 ——86

---

87. How many 1½ cent stamps would you give in even exchange for 30 one-half cent stamps?

a 10
b 15
c 20
d 45 ——87

GO RIGHT ON TO THE NEXT PAGE

88. A ball team played 25 games and won 7 games more than it lost. How many games did it win?

a 7
b 9
c 16
d 18 ——88

---

89. How many sheets of paper 7 inches by 10 inches can you cut from a sheet of paper 21 inches by 30 inches?

a 3
b 6
c 9
d 34 ——89

---

90. At 10 cents a foot, what is the cost of enough molding to go around the ceiling of a room 15 feet wide by 16 feet long?

a $3.10
b $6.20
c $31.00
d $24.00 ——90

---

91. $2\frac{1}{2}$ times what number equals 40?

a 16
b 8
c 15
d 17 ——91

---

92. If a 5 inch cube of ice weighs $4\frac{1}{4}$ pounds, how many pounds will a 10 inch cube weigh?

a $212\frac{1}{2}$
b $8\frac{1}{2}$
c 34
d 50 ——92

---

93. What is the number which if multiplied by 2 is 4 less than 3 times 6?

a 6
b 7
c 14
d 8 ——93

---

94. Jim says his age is $\frac{1}{4}$ of his uncle's, and that their ages together total 40 years. How many years difference is there between Jim's and his uncle's age?

a 10
b 20
c 24
d 30 ——94

---

95. A tank is fed by two pipes, one of which can fill it in 2 hours, and the other in 3 hours. A third pipe can empty it in 1 hour. If the tank is full and all three pipes are opened and operating to full capacity, how many hours will it take to empty the tank?

a 2
b 4
c 5
d 6 ——95

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 6 Score
(number right).....

DIRECTIONS: Mark as you are told the number of the word that means the same or about the same as the first word.

TEST 7.

H. **blossom** [1] tree [2] vine [3] flower [4] garden —— H

96. **strange** [1] real [2] tell [3] certain [4] unknown —— 96

97. **reply** [1] news [2] answer [3] note [4] open —— 97

98. **liberty** [1] benefit [2] seize [3] freedom [4] aid —— 98

99. **assist** [1] consent [2] help [3] agree [4] overlook —— 99

100. **admire** [1] defend [2] protect [3] approve [4] agree ——100

101. **aim** [1] offer [2] apply [3] haste [4] end ——101

102. **esteem** [1] reject [2] estimate [3] exceed [4] respect ——102

103. **acquire** [1] agree [2] conduct [3] obtain [4] conflict ——103

104. **counsel** [1] glory [2] advice [3] generous [4] satisfy ——104

105. **ample** [1] season [2] plentiful [3] alive [4] autumn ——105

106. **amaze** [1] agree [2] betray [3] surprise [4] contrary ——106

107. **oppress** [1] promise [2] imitate [3] crowd [4] burden ——107

108. **liberal** [1] lonely [2] generous [3] learned [4] real ——108

109. **predatory** [1] soft [2] stationary [3] plundering [4] lasting ——109

110. **obstinate** [1] saucy [2] headstrong [3] satisfactory [4] obedient ——110

111. **eternal** [1] worthy [2] brief [3] endless [4] native ——111

112. **fugitive** [1] fetter [2] accident [3] saddle [4] runaway ——112

113. **legend** [1] ancient [2] legion [3] story [4] leisure ——113

114. **entreat** [1] refuse [2] plead [3] repair [4] reform ——114

115. **notable** [1] terrible [2] brilliant [3] severe [4] famous ——115

116. **diminish** [1] obtain [2] repeat [3] reduce [4] plentiful ——116

117. **envious** [1] amiable [2] jealous [3] boisterous [4] enormous ——117

118. **prophecy** [1] suggestion [2] task [3] substance [4] prediction ——118

119. **corrode** [1] collect [2] disintegrate [3] applaud [4] blame ——119

120. **invariably** [1] probably [2] seldom [3] always [4] motionless ——120

121. **detect** [1] remove [2] discover [3] overtake [4] apply ——121

122. **reluctantly** [1] gladly [2] instantly [3] certainly [4] unwillingly ——122

123. **inefficient** [1] unruly [2] prudent [3] incompetent [4] inevitable ——123

124. **facetious** [1] active [2] fragile [3] humorous [4] inventive ——124

125. **ambiguous** [1] hard [2] doubtful [3] responsible [4] confident ——125

126. **utilize** [1] harmonize [2] identify [3] use [4] invite ——126

127. **dejected** [1] slow [2] disheartened [3] weighty [4] destroyed ——127

128. **dexterity** [1] safety [2] advantage [3] affection [4] skill ——128

129. **defer** [1] affirm [2] delay [3] confer [4] ordain ——129

130. **deride** [1] advance [2] encourage [3] ennoble [4] ridicule ——130

131. **concede** [1] overrule [2] engage [3] allow [4] endeavor ——131

132. **invoke** [1] hover [2] imitate [3] ask [4] invest ——132

133. **coerce** [1] varnish [2] adverse [3] treasure [4] compel ——133

134. **tarnish** [1] frighten [2] blacken [3] lament [4] torment ——134

135. **antecedent** [1] actual [2] pretended [3] previous [4] genuine ——135

136. **disparage** [1] divert [2] discredit [3] deprive [4] divide ——136

137. **impervious** [1] empty [2] injurious [3] impenetrable [4] important ——137

138. **deleterious** [1] harmful [2] just [3] tardy [4] particular ——138

139. **presage** [1] wisdom [2] precedent [3] foretell [4] promote ——139

140. **surfeit** [1] excess [2] excel [3] survey [4] feature ——140

141. **vertigo** [1] greenish [2] truth [3] strength [4] giddiness ——141

142. **quondam** [1] quota [2] survivor [3] former [4] future ——142

143. **mandible** [1] handcuff [2] jaw [3] law [4] forceful ——143

144. **odium** [1] favor [2] blame [3] smell [4] poem ——144

145. **chuff** [1] peeve [2] churl [3] cliff [4] laugh ——145

STOP

Test 7 Score (number right).....

California Short-Form Test of Mental Maturity

intermediate GRADES 7 to 10, ADULT '50 S-form

DEVISED BY E. T. SULLIVAN, W. W. CLARK, AND E. W. TIEGS

Name ..... Occupation or Grade ..... Sex M-F
(Last, First, Middle)

School or Organization ..... City ..... Date of Test ..... (Month, Day, Year)

Examiner ..... (.....) Examinee's Age ..... Date of Birth ..... (Month, Day, Year)

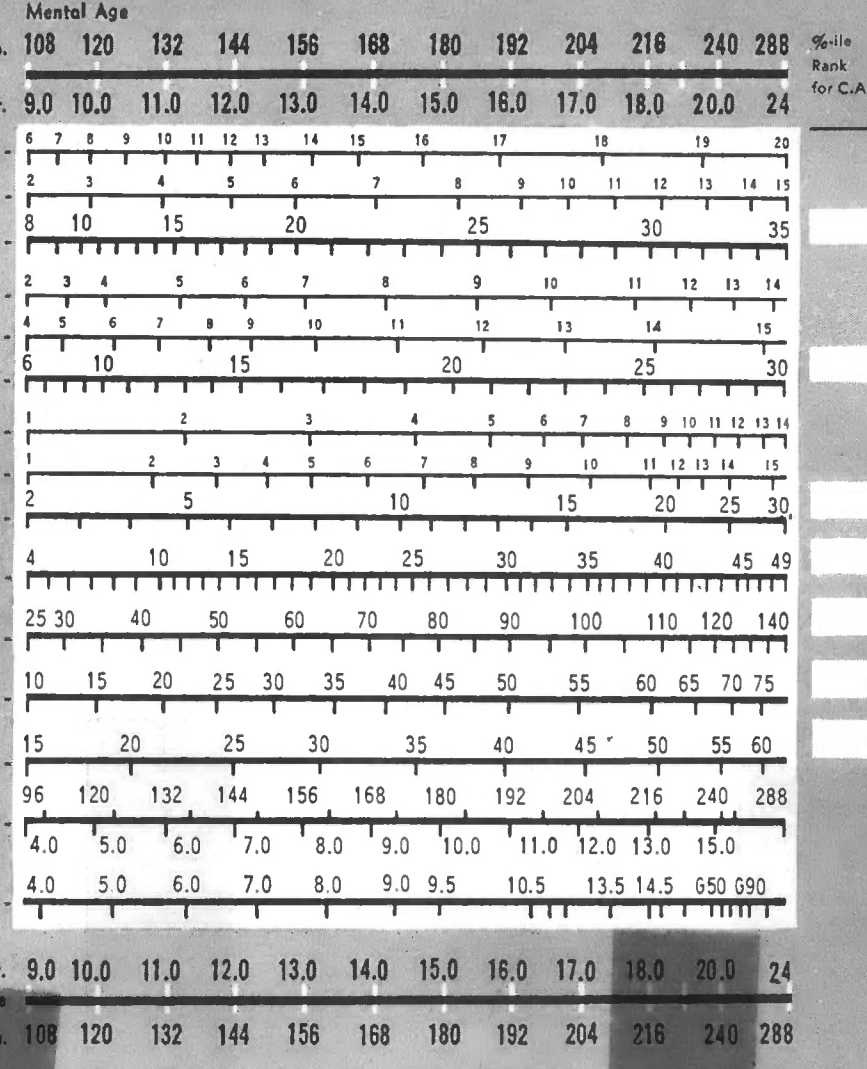
See MANUAL for instructions.

Factor	Test	Possible Score	Examinee's Score
SPATIAL RELATIONSHIPS	1. Sensing Right and Left	20*	
	2. Manipulation of Areas	15*	
	TOTAL (1+2)	35	
LOGICAL REASONING	3. Similarities	15*	
	4. Inference	15	
	TOTAL (3+4)	30	
NUMERICAL REASONING	5. Number Series	15*	
	6. Numerical Quantity	15	
	TOTAL (5+6)	30	
VERBAL CONCEPTS	7. TOTAL VERBAL CONCEPTS	50	
	TOTAL MENTAL FACTORS	145	
	LANGUAGE FACTORS (4+6+7)	80	
	NON-LANGUAGE FACTORS (1+2+3+5)	65	
	CHRONOLOGICAL AGE (Average Grade Placement Equivalent)		
	INTELL. GRADE PLACEMENT		

* Non-language Tests

** Age 16 and older, divide by 192 months.

DIAGNOSTIC PROFILE (Chart Examinee's Scores Here)



SUMMARY OF DATA

	TOTAL MENTAL FACTORS	LANGUAGE FACTORS	NON-LANG. FACTORS
SCORES			
MA divided by CA** equals I.Q.			
INTELLIGENCE GRADE PLACEMENTS			

For comparison and prediction, use I. Q. percentile norms on page 19 of Manual.

	TMF	LANG	N-L
Normal Population			
9th Grade			
10th Grade			
11th Grade			
12th Grade			
College Freshmen			
College Saphomores			
College Graduates			
Others _____			

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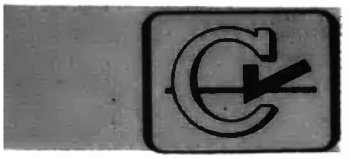

Intermediate • GRADES 7 - 8 - 9 • form AA

California Achievement Tests
Complete Battery

READING — ARITHMETIC — LANGUAGE

(Formerly Progressive Achievement Tests — Intermediate Battery)

DEVISED BY ERNEST W. TIEGS AND WILLIS W. CLARK

Reading

INSTRUCTIONS TO STUDENTS:

This is a reading test. In taking it you will show how many words you know and how well you understand what you read. No one can do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

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DIRECTIONS: Mark as you are told the number of the word that means the opposite or about the opposite of the first word.

SAMPLE: A. large [1] rich [2] small [3] gone [4] away

Correct Test Booklet Mark: 2 A

Correct Answer Sheet Mark: A 1 2 3 4

TEST 1 — SECTION A

1. **addition** [1] victory [2] review [3] subtraction [4] hammer ____ 1
2. **unknown** [1] neglect [2] property [3] known [4] drum ____ 2
3. **add** [1] about [2] house [3] sometime [4] subtract ____ 3
4. **whole** [1] item [2] part [3] sweet [4] lower ____ 4
5. **domestic** [1] foreign [2] election [3] contrary [4] perish ____ 5
6. **advance** [1] autumn [2] decrease [3] cottage [4] model ____ 6
7. **divisor** [1] plunge [2] submit [3] multiplier [4] line ____ 7
8. **fraction** [1] parrot [2] paddle [3] spacious [4] integer ____ 8
9. **purchase** [1] sale [2] spoke [3] market [4] cloud ____ 9
10. **similar** [1] publish [2] burden [3] reveal [4] unlike ____ 10
11. **total** [1] carriage [2] fraction [3] native [4] treasure ____ 11
12. **even** [1] rapid [2] odd [3] promise [4] regular ____ 12
13. **irregular** [1] ashore [2] hymn [3] countenance [4] systematic ____ 13
14. **equality** [1] inequality [2] scandal [3] rely [4] pare ____ 14
15. **annex** [1] casket [2] separate [3] balloon [4] adult ____ 15
16. **wholesale** [1] coral [2] ascribe [3] fleecy [4] retail ____ 16
17. **concave** [1] flaw [2] convex [3] discretion [4] caramel ____ 17
18. **creditor** [1] meridian [2] expand [3] debtor [4] dough ____ 18
19. **base** [1] surface [2] diagonal [3] altitude [4] contents ____ 19
20. **assets** [1] expenses [2] liabilities [3] gain [4] statement ____ 20
21. **bisect** [1] binomial [2] reduce [3] double [4] increase ____ 21
22. **assessment** [1] reduction [2] efface [3] loom [4] dividend ____ 22

TEST 1 — SECTION B

23. **melt** [1] permit [2] human [3] freeze [4] farther ____ 23
24. **spring** [1] matter [2] autumn [3] rivulet [4] year ____ 24
25. **invisible** [1] visible [2] reasonable [3] monkey [4] stupid ____ 25
26. **contract** [1] package [2] couch [3] expand [4] glitter ____ 26
27. **natural** [1] increase [2] accidental [3] spread [4] artificial ____ 27
28. **bleach** [1] badge [2] dye [3] dell [4] madman ____ 28
29. **constant** [1] attack [2] grade [3] variable [4] stuff ____ 29
30. **decay** [1] want [2] optical [3] punctual [4] growth ____ 30
31. **compound** [1] sturdy [2] scramble [3] element [4] rave ____ 31
32. **consume** [1] hillside [2] develop [3] fern [4] girdle ____ 32
33. **repel** [1] attract [2] poisonous [3] motto [4] staple ____ 33
34. **preserve** [1] eccentric [2] diary [3] annihilate [4] soot ____ 34
35. **molten** [1] indigo [2] frozen [3] frenzy [4] rafter ____ 35
36. **segregate** [1] colonial [2] naught [3] ginger [4] cluster ____ 36
37. **sterile** [1] plush [2] fertile [3] huff [4] minor ____ 37
38. **transparent** [1] shawl [2] opaque [3] studied [4] inclination ____ 38
39. **analysis** [1] shorten [2] concrete [3] amalgamate [4] synthesis ____ 39
40. **conserve** [1] patter [2] identify [3] janitor [4] expend ____ 40
41. **terminal** [1] origin [2] faucet [3] engraver [4] countess ____ 41
42. **septic** [1] germ [2] tank [3] sterile [4] separate ____ 42
43. **mutation** [1] reduction [2] heredity [3] deaf [4] environmental ____ 43
44. **agitation** [1] quiescent [2] agrarian [3] agnostic [4] cogitation ____ 44
45. **abundant** [1] recent [2] minute [3] process [4] summon ____ 45

Sec. A Score (number right)_____

Sec. B Score (number right)_____

DIRECTIONS: Mark as you are told the number of the word that means the opposite or about the opposite of the first word.

SAMPLE: B. large [1] rich [2] small [3] gone [4] away

Correct Test Booklet Mark: 2 B

Correct Answer Sheet Mark: B 1 2 3 4

TEST 1 — SECTION C

46. **war** [1] peace [2] certain [3] dark [4] number ____46
47. **boss** [1] mortgage [2] employee [3] scan [4] quill ____47
48. **interior** [1] rage [2] scorn [3] relate [4] exterior ____48
49. **enemy** [1] ally [2] interest [3] storm [4] practice ____49
50. **citizen** [1] slope [2] alien [3] operation [4] divine ____50
51. **government** [1] spirit [2] increase [3] anarchy [4] wheel ____51
52. **lawful** [1] naught [2] quote [3] illegal [4] reprove ____52
53. **publish** [1] suppress [2] decay [3] most [4] wax ____53
54. **liberty** [1] glory [2] captivity [3] manufacture [4] standard ____54
55. **honesty** [1] strenuous [2] fraud [3] prior [4] indifferent ____55
56. **majority** [1] beggar [2] equity [3] minority [4] forge ____56
57. **challenge** [1] thimble [2] indulge [3] defend [4] harbinger ____57
58. **opponent** [1] wallet [2] radical [3] tenant [4] assistant ____58
59. **conquest** [1] defeat [2] strain [3] salary [4] process ____59
60. **assault** [1] countenance [2] delivery [3] protect [4] festival ____60
61. **organization** [1] spill [2] dissolution [3] ripple [4] theme ____61
62. **freedom** [1] depart [2] fortune [3] example [4] subjection ____62
63. **descendant** [1] scenery [2] ascent [3] ancestor [4] volunteer ____63
64. **prohibition** [1] minion [2] toleration [3] reduction [4] phosphorous ____64
65. **corruption** [1] integrity [2] lowly [3] cravat [4] racketeer ____65
66. **system** [1] connect [2] agree [3] beam [4] chaos ____66
67. **neutrality** [1] leaves [2] controversy [3] millinery [4] hereditary ____67
68. **truce** [1] hobble [2] flier [3] campaign [4] economic ____68

TEST 1 — SECTION D

69. **present** [1] absent [2] milk [3] number [4] front ____69
70. **direct** [1] afraid [2] loud [3] indirect [4] health ____70
71. **perfect** [1] stood [2] imperfect [3] equal [4] manner ____71
72. **pit** [1] tumble [2] compel [3] reduce [4] peak ____72
73. **unusual** [1] common [2] meadow [3] assure [4] drown ____73
74. **definite** [1] indulge [2] gobble [3] indefinite [4] escort ____74
75. **positive** [1] peel [2] namely [3] lonesome [4] negative ____75
76. **progress** [1] dizzy [2] decline [3] caravan [4] concrete ____76
77. **agreement** [1] scripture [2] discord [3] stag [4] tinkle ____77
78. **convict** [1] combine [2] moral [3] prejudice [4] free ____78
79. **cause** [1] effect [2] against [3] certain [4] cold ____79
80. **final** [1] original [2] caught [3] meal [4] establish ____80
81. **reverence** [1] loaf [2] dishonor [3] philosopher [4] screen ____81
82. **oppose** [1] standard [2] gobble [3] serve [4] drove ____82
83. **criticism** [1] infest [2] coupling [3] commendation [4] feud ____83
84. **hypocrisy** [1] cooky [2] chide [3] blithe [4] fidelity ____84
85. **esteem** [1] pitch [2] factory [3] guilty [4] blame ____85
86. **initial** [1] hustle [2] terminal [3] fraught [4] eddy ____86
87. **worthless** [1] add [2] instruct [3] merit [4] credit ____87
88. **revelation** [1] filial [2] moulder [3] sorcery [4] disguise ____88
89. **falter** [1] fern [2] unity [3] execute [4] girdle ____89
90. **intricate** [1] efficiency [2] clay [3] simple [4] delicacy ____90

Sec. C Score (number right)_____

Sec. D Score (number right)_____

DIRECTIONS: Read the following directions. Mark as you are told the number or letter of each correct answer.

TEST 2 — SECTION E

91. Read the following names:
Mary Louis Roger Elizabeth
Mark the number which shows the first letters of the boys' names.
1 ML 2 RE 3 LR 4 ME ——91

92. Read these numbers:
5 1 0 6 7 4 5 9 8 0
Mark the letter of the third number after 6.
a 7 b 5 c 9 d 1 ——92

93. The area of a triangle is found by multiplying ½ the base by the altitude. Mark the letter of the number of square feet in a triangle which has a base of 4 feet and an altitude of 3 feet.
a 6 b 12 c 4 d 2 ——93

94. Latitude is the distance north or south from the equator. Mark the letter of the following ship's reading which indicates latitude.
a West 8° 2′ 20″
b North 2° 48′ 10″
c East 10° 19′ 30″ ——94

95. American is the proper adjective derived from the proper noun, America. Mark the number of the word which is the proper adjective of the proper noun, Arabia.
1 Arabia's 2 Arabia 3 Arabian ——95

96. Regular adverbs are formed by adding *ly* to the adjectives, such as beautiful, beautifully. Mark the number of the word which is the adverb formed from the adjective, sweet.
1 sweetly 2 sweetest 3 sweeter ——96

97. The word, full, used as a suffix drops one *l*; as cup, cupful. Mark the number of the word which has the word *full* added as a suffix to the word, mouth.
1 full 2 mouthful 3 mouth full ——97

98. Nouns ending in *y*, when the *y* is preceded by a vowel, form the plural regularly by adding *s*; as monkey, monkeys. Mark the number of the word which is the plural of donkey.
1 donkeys 2 donkey 3 donkey's ——98

99. Read the following recipe:
2 cups flour
½ cup lard
1 teaspoonful salt
milk
2 teaspoonfuls baking powder
Take the flour, salt, and baking powder and sift together; mix in the lard thoroughly; add the milk; roll the dough out about one-half inch thick and cut with a biscuit cutter. Bake in a hot oven about twelve minutes. Mark the number of the item which is the fourth thing to be used in mixing the above recipe.
1 milk 2 lard 3 salt
4 baking powder ——99

100. The length of the diagonal line in a rectangle is found by adding the square of the base to the square of the altitude and then extracting the square root of this sum. Mark the letter which indicates the length in inches of the diagonal of a rectangle whose base is 8 inches and whose altitude is 6 inches. (Eight squared is 64, 6 squared is 36, and 10 is the square root of 100.)
a 6 b 8 c 10 d 36 ——100

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. E Score (number right) .....

DIRECTIONS: Mark as you have been told the number or letter of each correct answer.

TEST 2 — SECTION F

101. The introduction is found in what part of a book?
[1] beginning [2] middle [3] end ____101

102. The appendix is found in what part of a book?
[1] beginning [2] middle [3] end ____102

103. A glossary contains
[1] index [2] definitions [3] pictures ____103

104. The bibliography is found in what part of a book or chapter?
[1] beginning [2] middle [3] end ____104

105. A preface is found in what part of a book?
[1] beginning [2] middle [3] end ____105

✓ **Look at the following and answer questions 106 and 107.**

Table of Contents

106. On what page does "Methods of Handling" begin?
[a] 1 [b] 25 [c] 40 [d] 55 ____106

107. Which of these stories is on page 75?
[1] Reindeer Meat
[2] The Embargo
[3] Imported Meat ____107

✓ **Look at this index and find the answers to questions 108, 109, and 110.**

INDEX

108. Information concerning French Guiana will be found on what page?
[a] 298-99 [b] 351 [c] 251 [d] 355 ____108

109. Information concerning manufacturing in France will be found on what page?
[a] 298-99 [b] 301-2 [c] 300 [d] 299 ____109

110. Information concerning products of French Equatorial Africa will be found on what page?
[a] 380 [b] 351 [c] 355 [d] 350 ____110

GO RIGHT ON TO THE NEXT PAGE

✓ **Decide which are the TWO best topics to look up in an encyclopedia or reference book for information on the following subjects. Mark the numbers of these two topics.**

Sample C: Skating in Holland

[1] Skating [2] Wrestling
[3] Baseball [4] Football
[5] Recreation in Holland

Answers to Sample C:

Correct Test Booklet Mark	Correct Answer Sheet Mark
1-5 c	C 1-2 1-3 1-4 **1-5** 2-3 / 2-4 2-5 3-4 3-5 4-5

111. Raising Sheep in Australia

[1] Australia [2] Animals
[3] Sheep [4] Farming [5] Meat ——111

112. Rubber Plantations in Brazil

[1] Automobile Tires
[2] Plantations [3] Rubber
[4] Brazil [5] South America ——112

113. Communication by Radio

[1] Telegraph [2] Radio [3] Cables
[4] Inventors [5] Wireless ——113

114. Destructive Insects in the Citrus Industry

[1] Horticulture
[2] Industry [3] Citrus Fruit
[4] Destruction [5] Pests ——114

115. The Baseball Game in America

[1] Schools [2] Big League
[3] Baseball [4] Games
[5] America ——115

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. F Score (number right)_____

TEST 2 — SECTION G

✓ **Read this story:**

After the Revolutionary War, America was thrown upon her own economic and social resources. Some of the problems are particularly well illustrated by the textile industry.

In the early days it was difficult for America to make much progress or to compete with England in this field. England would not allow machinery or models of machines to be exported and discouraged their skilled mechanics from leaving their own country. However, in 1789, Samuel Slater, who had previously worked in an English factory, came to Rhode Island and built the first power cotton spinning mill in America. He has been called the "Father of American Manufacture."

Even with the aid of such men as Slater the textile industry developed very slowly. Fifteen years after the first cotton mill was built, there were only four cotton mills in America. The passing of the Embargo Act of 1807 and the War of 1812 stimulated manufacturing temporarily, but the close of the War of 1812 was followed by a slump in American industry which gave rise to additional protective tariff laws.

During the Civil War manufacturing of textiles was greatly hindered because of lack of raw materials. However, after 1865 a new industrial era began. Many mechanical improvements were made and "mass production" was instituted. Before long the United States had advanced to first rank among textile-producing nations. She has held this position until recent years when foreign competition appears to have become a very important factor.

GO RIGHT ON TO THE NEXT PAGE

✓ Mark as you have been told the number of each correct answer. You may look back to find the answers.

116. The best title for the story is
[1] Textiles [2] Raw Materials
[3] Communication ——116

117. Samuel Slater built a
[1] cotton gin [2] telegraph
[3] spinning mill ——117

118. In 1805, there was the following number of cotton mills
[1] two [2] four [3] ten ——118

119. The Embargo Act of 1807 was a
[1] treaty [2] restriction
[3] amendment ——119

120. Mechanical improvements were responsible for
[1] no production
[2] limited production
[3] mass production ——120

121. The textile industry includes
[1] mining [2] agriculture
[3] manufacture of cloth ——121

122. England affected the early development of the textile industry in the United States by
[1] encouragement [2] hindrance
[3] financing ——122

✓ Read this story:

The fish is the lowest of the five large classes of vertebrates. The principal characteristics of a fish are: it is cold-blooded, breathes by means of gills, lays eggs, and lives in the water. It has a bony skeleton and a wedge-shaped body which is covered with overlapping scales. There are, however, numerous variations from the typical fish. For example, the catfish has no scales, the climbing perch can climb trees, and the flying fish can rise out of the water for gliding flight.

At the present time there are about 13,000 known species of fish found in great abundance and variety in oceans, lakes, and rivers throughout the world. Records show that, in one year, the amount of fresh fish and shell fish caught in the five leading states and territories of the United States was as follows:

	Weight in Pounds	Per Cent
California	851,388,000	27.4
Alaska	642,498,000	20.7
Massachusetts	446,545,000	14.4
Maine	162,700,000	5.2
Washington	152,224,000	4.9
Others	842,397,000	27.4
Total	3,097,752,000	100.0

Many varieties of fish are of great economic value. Such fish as salmon and tuna are very popular and are therefore more expensive, even though they do not have as high food value as cheaper fish, such as herring, cod, and mackerel. These cheaper fish compare favorably in food value with beef and mutton. Aside from food value, there are many by-products in commercial fishing, such as the various kinds of fish oils, glue, gelatine, isinglass, fertilizers, and leather.

✓ Mark the number of each correct answer. You may look back to find the answers.

123. The best title for this story is
[1] Origin of Fish
[2] Commercial Fishing [3] Fish ——123

124. The fish is a
[1] variation [2] vertebrate [3] biped ——124

GO RIGHT ON TO THE NEXT STORY

GO RIGHT ON TO THE NEXT PAGE

125. "Known species" means
[1] money [2] samples [3] varieties ____125

126. The third state or territory in amount of commercial fishing in one year was
[1] California [2] Massachusetts [3] Maine ____126

127. About 20 per cent of the fish were caught in
[1] Alaska [2] California [3] Maine ____127

128. The fish having the greatest food value is
[1] Tuna [2] Salmon [3] Mackerel ____128

129. One of the by-products of fish is
[1] rubber [2] isinglass [3] wood ____129

GO RIGHT ON TO THE NEXT STORY

✓ **Read this story:**

The railroad has had its most rapid and largest development in the United States, even though the locomotive was invented in England. Railroad companies were organized in the United States in 1826, and locomotives were first run in 1830. These early railroads were operated on a small scale and connected only the larger cities of the Atlantic seaboard.

Since its beginning, railroad construction has been carried on periodically. During the decade preceding the Civil War there was very active building in the South. At this time railroads were built between the Alleghany mountains and the Mississippi river. After the Civil War there was very little construction until 1868, at which time there began a great activity for a period of five years. This resulted in an over-expansion of railroad lines in the far West and the middle West. The principal railroads in the United States had been completed by 1890, and all additional construction merely supplemented previously built lines. Since 1920 there has been an abandonment of certain lines, so that at this time there is an actual reduction of mileage in the railway transportation system.

The development of the railroad has been one of the principal factors in the economic and social revolution. It has provided wider contacts, a better system for distribution of products, and a greater variety of materials. With accurate train schedules and quick delivery service, the merchant does not need to carry a large stock of supplies, but may conduct his business with a smaller amount of capital. Improvement in transportation facilities has given man a wider field of interest and otherwise has been an important factor in the growth of our country.

✓ **Mark the number of each correct answer. You may look back to find the answers.**

130. The best title for this story is
[1] Invention of Locomotives
[2] Transportation Systems
[3] Railroads ____130

131. The locomotive was invented in
[1] England [2] United States [3] France ____131

132 The principal railroad lines had been constructed by
[1] 1868 [2] 1890 [3] 1885 ____132

133. Railroad construction in the United States has been
[1] steady [2] systematic [3] irregular ____133

134. Transportation facilities in 1826 were
[1] good [2] fair [3] poor ____134

135. Better transportation facilities enabled merchants to conduct their business with
[1] less capital
[2] about the same capital
[3] more capital ____135

GO RIGHT ON TO THE NEXT PAGE

TEST 2 — SECTION G (Continued)

✓ **Read this story:**

The Telegraph

For eleven years Samuel Morse had been trying to interest someone in his invention of the telegraph, and endured great poverty in attempting to carry out the experimentation. Finally, in 1843, Congress appropriated $30,000.00 for this purpose, and Morse was enabled to make rapid progress in the development of telegraphy.

In the spring of 1844 when the political parties were holding their conventions, the telegraph was ready for practical application. He was able to notify the candidates and the people in Washington of the results of the conventions before they were able to secure the information otherwise. This aroused the public interest, and there was a general realization of the remarkable accomplishment. From that time forward the telegraphic system grew with astounding rapidity, and covered the entire world within thirty years.

At first the telegraph was mechanically complicated, but with constant research the instruments became simpler. During recent times, however, with the complexities of modern life the system has become somewhat involved. Every city has an intricate system of telegraph wires underneath the surface of the streets, and even the continents are connected by cables in the oceans.

The development of the telegraph has brought the world closer together by providing a method whereby ideas and messages of the entire world may be brought within the reach of all in a minimum of time. This process has been greatly accelerated by recent improvements in wireless telegraphy.

✓ **Mark the number of each correct answer. You may look back to find the answers.**

136. An appropriation consists of
[1] congratulations [2] money [3] inventions ____136

137. An intricate system is
[1] complicated [2] antique [3] radical ____137

✓ **Read the eight statements below. You are to select the one that would make the best title for each of the four paragraphs of the story. You may look back to find the answers.**

Statements

1. Wider use of telegraphy
2. Communication of words
3. The inventor's struggle
4. Congress and elections
5. Effects of telegraphy
6. Ideas and messages
7. The practical demonstration
8. Necessity

138. The best title for the first paragraph is statement
1 2 3 4 5 ____138

139. The best title for the second paragraph is statement
4 5 6 7 8 ____139

140. The best title for the third paragraph is statement
1 2 3 4 5 ____140

141. The best title for the fourth paragraph is statement
4 5 6 7 8 ____141

The following things are mentioned in the story:

Complex system
Mechanically complicated instruments
Wireless telegraphy
Simpler instruments

The order in which the above things were mentioned in the story is as follows:

142. Complex system was
1st 2nd 3rd 4th ____142

143. Mechanically complicated instruments were
1st 2nd 3rd 4th ____143

144. Wireless telegraphy was
1st 2nd 3rd 4th ____144

145. Simpler instruments were
1st 2nd 3rd 4th ____145

Sec. G Score
(number right).....

Arithmetic

INSTRUCTIONS TO STUDENTS:

This is an arithmetic test. In taking it you will show how well you can think and work problems. No one is expected to do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

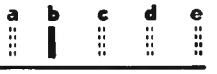
Do not write, mark, or figure on this test booklet unless told to do so by the examiner.

DIRECTIONS: Decide how each of the amounts below should be written as a number. Then mark as you are told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think that none of the answers given is correct, mark the letter, e. In doing this test you should finish the first column before doing the second. Look at the samples to the right and see how they are marked.

Sample A: Twelve

a 10
b 12
c 11
d 2
e None

Correct Answer Sheet Mark



Correct Test Booklet Mark

b A

Sample B: Twenty

a 22
b 200
c 2
d 21
e None

Correct Answer Sheet Mark

Correct Test Booklet Mark

e B

TEST 3 — SECTION A

1. Eight hundred forty-five
   a 80,045
   b 8045
   c 845
   d 458
   e None ____ (1)

2. Five thousand twenty
   a 520
   b 5020
   c 500020
   d 50,020
   e None ____ (2)

3. Ten thousand sixty-four
   a 10,000,64
   b 1064
   c 10,064
   d 10,640
   e None ____ (3)

4. One million ten thousand eleven
   a 1,001,011
   b 1,000,000,10,000,11
   c 1,010,011
   d 1,100,011
   e None ____ (4)

5. Three-eighths
   a .38
   b 888
   c .038
   d 8/3
   e None ____ (5)

6. Ninety-nine dollars and five cents
   a $99.5¢
   b $99.5
   c $99.05
   d 99.05
   e None ____ (6)

7. Fifty-five per cent
   a 55,100
   b $0.55
   c 55%
   d 55
   e None ____ (7)

✓ **Read these Roman numerals. Then mark as you have been told the letter of each correct answer.**

8. LXX means
   a 20
   b 30
   c 70
   d 90
   e None ____ (8)

9. DCC means
   a 200
   b 400
   c 600
   d 700
   e None ____ (9)

10. M means
    a 500
    b 1000
    c 4000
    d 6000
    e None ____ (10)

✓ **Find the largest number, marked a, b, c, or d, in each of the following rows. Then mark its letter.**

11. a 45 b 200 c 156 d 80 ____ 11

12. a $89\frac{3}{4}$ b $66\frac{1}{2}$ c $106\frac{5}{6}$ d $55\frac{2}{3}$ ____ 12

13. a .025 b .099 c .75 d .015 ____ 13

14. a $\frac{5}{6}$ b $\frac{3}{4}$ c $\frac{7}{8}$ d $\frac{2}{3}$ ____ 14

15. a $\frac{3}{4}$ b $(\frac{3}{4})^2$ c $(\frac{2}{3})^4$ d $(\frac{7}{8})^3$ ____ 15

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. A Score (number right).....

DIRECTIONS: Mark the letter or number of each correct answer. If you do not know an answer, or you think that none of the answers given is correct, you should mark the letter, e (items 16-20), or the number, 5 (items 21-25). Finish the first column before doing the second. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 3 — SECTION B

16. $\sqrt{64}$ is
a 10
b 8
c 4096
d 24
e None
(16)

17. 10% of 50 =
a 500
b 60
c 5
d 1/5
e None
(17)

18. A right angle equals how many degrees?
a 90°
b 45°
c 180°
d 360°
e None
(18)

19. Which two numbers are both factors of 15?
a 10,5
b 3,5
c 2,25
d 2,30
e None
(19)

20. What is the greatest common divisor of 9, 18, and 27?
a 27
b 6
c 3
d 9
e None
(20)

21. π means
1 add
2 pi
3 radius
4 degree
5 None
(21)

22. % means
1 per cent
2 subtract
3 dram
4 dollar
5 None
(22)

23. ° means
1 multiply
2 degree
3 per cent
4 divide
5 None
(23)

24. $\sqrt{}$ means
1 add
2 ounce
3 interest
4 square root
5 None
(24)

25. △ means
1 square
2 pyramid
3 circle
4 octagon
5 None
(25)

DIRECTIONS: Some rules used in measurement, numbered 1, 2, 3, 4, and 5, are given to the right below. Some problems that can be worked with these rules are given on the left, numbered 26, 27, 28, 29, and 30. Mark the number of the rule on the right which is used to find the answer to each problem on the left.

Problems	Rule
26. Volume of a prism	____26
27. Area of a rectangle	____27
28. Length of a rectangle	____28
29. Circumference of a circle	____29
30. Area of a triangle	____30

Rules Used in Measurement

1. Multiply ½ base by altitude.
2. Multiply diameter by 3.1416 or 3⅐.
3. Multiply width by length.
4. Divide area by width.
5. Multiply length by width by height.

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. B Score (number right).....

DIRECTIONS: Work these problems. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think that none of the answers given is correct, you should mark the letter, e. Finish the first column before doing the second. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 3 — SECTION C

31. Add:
$$\begin{array}{r} 72 \\ -31 \\ \hline 28 \end{array}$$
a 131
b 13
c 69
d 75
e None
(31)

32. Subtract:
$$\begin{array}{r} 45\,d \\ 28\,d \\ \hline \end{array}$$
a 17
b 17 d
c 17 d^2
d —17 d
e None
(32)

33. The minuend is 8; the subtrahend is 12; the difference is
a —4
b 20
c 40
d $\frac{2}{3}$
e None
(33)

34. Multiply: 4 (—8)
a —4
b 32
c —32
d —12
e None
(34)

35. Divide: $\frac{-24}{8}$
a —192
b 3
c 16
d —3
e None
(35)

✓ **Find the value of x in each of these equations. Then mark its letter.**

36. $8x = 40$
$x =$
a 320
b 5
c $\frac{1}{5}$
d 5x
e None
(36)

37. $x + 5 = 8$
$x =$
a 31
b 13
c 13x
d 12x
e None
(37)

38. $x^2 = 81$
$x =$
a x—9
b 81^2
c 9
d 81x
e None
(38)

39. $\frac{x}{2} = 8$
$x =$
a 8x
b 16
c 4
d $\frac{1}{4}$
e None
(39)

40. If $a = 4$, $b = 6$, and $c = 2$, find the value of x in the following equation:
$x = a + b - c$
$x =$
a 8
b 12
c 4
d 2
e None
(40)

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. C Score (number right).....

DIRECTIONS: Work these problems. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 3 — SECTION D

41. In a classroom there were 6 rows of desks with 7 desks in each row. Four desks were removed from the room. How many desks were left?

a 38
b 13
c 42
d 9
e None

(41)

42. Jack bought a used automobile for $75.00. He paid $15.00 down and is to pay the rest in twelve equal payments. How much will each payment be?

a $15.00
b $7.50
c $5.00
d $12.00
e None

(42)

43. Mary weighs 95 pounds, Sally weighs 85 pounds, and Jane weighs 120 pounds. What is their average weight in pounds?

a 100
b 96⅔
c 97½
d 102½
e None

(43)

44. How many square feet are there in a strip of paper which is 2 feet wide and 22 feet long?

a 20
b 26
c 11
d 52
e None

(44)

45. A box is 10 inches long, 6 inches wide, and 4 inches deep. How many cubic inches does it contain?

a 20
b 120
c 64
d 240
e None

(45)

46. Find the area of a parallelogram having a base of 20 in. and an altitude of 8 in.

a 40 sq. in.
b 28 sq. in.
c 2½ sq. in.
d 160 sq. in.
e None

(46)

47. Find the area of a triangle having a base of 20 in. and an altitude of 12 in.

a 240 sq. in.
b 120 sq. in.
c 1⅔ sq. in.
d ⅗ sq. in.
e None

(47)

GO RIGHT ON TO THE NEXT PAGE

48. When the scale of a map is "¼ in. = 20 mi.," how many miles apart are two cities that are represented on a map as 1½ in. apart?

a 30
b 60
c 40
d 120
e None

(48)

---

49. Dick, Harry, and James together received $50.00. Dick received $15.00, Harry received $25.00, and James received $10.00. What per cent of the $50.00 did Dick receive?

a 15
b 20
c 30
d 50
e None

(49)

---

50. Frank earned $16.00 and saved $8.00 of it. What per cent did he save?

a ½
b 50
c 33⅓
d 24.00
e None

(50)

---

51. A man received seven per cent interest on a loan of $200.00 for one year. How much interest did he receive?

a $20.00
b $14.00
c $7.00
d $9.00
e None

(51)

---

52. Helen missed 3 problems on a test but did 85% of them correctly. How many problems were there in the test?

a 20
b 10
c 82
d 88
e None

(52)

---

53. John sold brushes at $1.50 each and received a commission of 30% on his sales. How much did he make on each brush sold?

a $1.00
b 45¢
c 30¢
d 50¢
e None

(53)

---

54. A wooden building, valued at $12,500, was insured for 80% of its value. The rate of insurance was 24 cents per $100.00. What was the amount of the premium?

a $24.00
b $12.50
c $80.00
d $31.00
e None

(54)

---

55. Mary's father has a furniture store. The list price of a chair is $50.00 and two discounts are given: one of 20% and another of 10%. What did the chair cost Mary's father?

a $35.00
b $36.00
c $14.00
d $15.00
e None

(55)

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. D Score (number right).....

DIRECTIONS: Do these problems in addition. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 4 — SECTION E

(56)
$$\begin{array}{r} 134 \\ +453 \\ \hline \end{array}$$
a 60702
b —681
c $35\frac{1}{134}$
d 687
e None
(56)

(57)
$$\begin{array}{r} 307 \\ +430 \\ \hline \end{array}$$
a —177
b 132010
c 737
d $1\frac{123}{307}$
e None
(57)

(58)
$$\begin{array}{r} 27 \\ +25 \\ \hline \end{array}$$
a 42
b 52
c 2
d $1\frac{2}{25}$
e None
(58)

(59)
$$\begin{array}{r} 25 \\ 42 \\ 33 \\ +72 \\ \hline \end{array}$$
a 172
b 162
c 182
d 171
e None
(59)

(60)
$$\begin{array}{r} 3271 \\ 9468 \\ 1345 \\ +\ 701 \\ \hline \end{array}$$
a 13675
b 14685
c 13775
d 14785
e None
(60)

(61)
$$\begin{array}{r} \$56.35 \\ 3.68 \\ 12.75 \\ +\ 8.15 \\ \hline \end{array}$$
a $60.94
b $79.73
c $80.93
d $69.88
e None
(61)

(62) $\$20.00+\$.25+\$2+\$1.75=$
a $48.75
b $24.00
c $23.00
d $222
e None
(62)

(63)
$$\begin{array}{r} \frac{1}{4} \\ +\frac{1}{4} \\ \hline \end{array}$$
a 42
b $\frac{1}{16}$
c 0
d $\frac{1}{2}$
e None
(63)

(64)
$$\begin{array}{r} \frac{1}{4} \\ +\frac{1}{8} \\ \hline \end{array}$$
a $\frac{3}{8}$
b $\frac{2}{12}$
c $\frac{1}{6}$
d $\frac{1}{8}$
e None
(64)

(65)
$$\begin{array}{r} 12 \\ +\ 2\frac{3}{4} \\ \hline \end{array}$$
a $10\frac{1}{4}$
b $9\frac{1}{4}$
c $14\frac{3}{4}$
d $15\frac{3}{4}$
e None
(65)

(66)
$$\begin{array}{r} \frac{2}{3} \\ +2\frac{1}{6} \\ \hline \end{array}$$
a $-2\frac{1}{2}$
b $2\frac{5}{6}$
c $2\frac{3}{9}$
d $2\frac{1}{3}$
e None
(66)

(67)
$$\begin{array}{r} 12\frac{1}{4} \\ +\ 3\frac{1}{3} \\ \hline \end{array}$$
a $15\frac{7}{12}$
b $15\frac{2}{7}$
c $9\frac{1}{12}$
d $9\frac{1}{4}$
e None
(67)

(68)
$$\begin{array}{r} 3\frac{5}{6} \\ +2\frac{1}{4} \\ \hline \end{array}$$
a $5\frac{23}{20}$
b $1\frac{1}{2}$
c $6\frac{1}{12}$
d $5\frac{6}{10}$
e None
(68)

(69)
$$\begin{array}{r} 53\frac{1}{2} \\ 12\frac{2}{3} \\ +32\frac{3}{4} \\ \hline \end{array}$$
a $97\frac{7}{9}$
b $98\frac{11}{12}$
c $97\frac{23}{12}$
d $97\frac{6}{14}$
e None
(69)

(70) $6\frac{1}{2}+6.5=$
a 13
b $12\frac{1}{2}$
c $12\frac{1}{2}.5$
d 12.5
e None
(70)

(71) $.18\frac{1}{3}+12.15=$
a 30.475
b 6.775
c $12\frac{1}{3}$
d 6.475
e None
(71)

(72) $.05+.164+.2108=$
a .08748
b .2277
c .2222
d .4248
e None
(72)

(73) $33.4+6.21+.0382+8=$
a 47.6482
b 8.1337
c 1.2343
d 17.5882
e None
(73)

(74) 10% of 60+10% of 80=
a 48
b —2
c 14
d 2
e None
(74)

(75)
$$\begin{array}{r} 3 \text{ yd. } 2 \text{ ft. } 8 \text{ in.} \\ +2 \text{ yd. } 1 \text{ ft. } 6 \text{ in.} \\ \hline \end{array}$$
a 5 yd. 3 ft. 14 in.
b 1 yd. 1 ft. 2 in.
c 5 yd. 4 ft. 2 in.
d 6 yd. 1 ft. 2 in.
e None
(75)

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. E Score
(number right).....

DIRECTIONS: Do these problems in subtraction. Then mark os you have been told the letter of each correct answer. For some of the problems none of the onswers given moy be correct. If you connot work o problem, or if you think none of the answers given is correct, you should mark the letter, e. Finish eoch column before going on to the next. Be sure to reduce fractions to lowest terms.

TEST 4 — SECTION F

(76)
$$\begin{array}{r} 387 \\ -252 \\ \hline \end{array}$$
a 135
b 639
c 125
d —97524
e None
(76) ____

(77)
$$\begin{array}{r} 458 \\ -106 \\ \hline \end{array}$$
a 564
b 352
c 302
d 664
e None
(77) ____

(78)
$$\begin{array}{r} 71 \\ -27 \\ \hline \end{array}$$
a 98
b —1917
c 58
d 54
e None
(78) ____

(79)
$$\begin{array}{r} 2460 \\ -1870 \\ \hline \end{array}$$
a —4330
b 4330
c 1410
d 590
e None
(79) ____

(80)
$$\begin{array}{r} 8507 \\ -2939 \\ \hline \end{array}$$
a 5568
b 9446
c 10436
d 6678
e None
(80) ____

(81)
$$\begin{array}{r} \$15.25 \\ -\ \ 1.65 \\ \hline \end{array}$$
a $17.90
b $13.60
c $14.60
d $16.80
e None
(81) ____

(82) $200 — $14.25 =
a $214.25
b $5.75
c $185.75
d $20,014.25
e None
(82) ____

(83)
$$\begin{array}{r} 1/3 \\ -1/3 \\ \hline \end{array}$$
a 0
b 2/3
c 1/9
d —1/3
e None
(83) ____

(84)
$$\begin{array}{r} 2/5 \\ -1/5 \\ \hline \end{array}$$
a 3/5
b 1/5
c —1/5
d 3/25
e None
(84) ____

(85)
$$\begin{array}{r} 3/4 \\ -1/8 \\ \hline \end{array}$$
a 7/8
b 5/8
c —7/8
d —5/8
e None
(85) ____

(86)
$$\begin{array}{r} 4/5 \\ -1/4 \\ \hline \end{array}$$
a 1 1/20
b 1/4
c 11/20
d 3/5
e None
(86) ____

(87)
$$\begin{array}{r} 7\ 3/7 \\ -6 \\ \hline \end{array}$$
a 1 3/7
b 13 3/7
c —1 3/7
d —13 3/7
e None
(87) ____

(88)
$$\begin{array}{r} 8 \\ -4\ 1/4 \\ \hline \end{array}$$
a 3 3/4
b 12 1/4
c 32 1/4
d 2 1/4
e None
(88) ____

(89)
$$\begin{array}{r} 3\ 3\ 1/8 \\ -1\ 1\ 3/8 \\ \hline \end{array}$$
a 21 3/4
b 22 1/4
c 44 1/2
d —44 1/2
e None
(89) ____

(90) 30.6 — 5 1/2 =
a 31
b 25.1
c 25.5 1/2
d 36
e None
(90) ____

(91) 55 4/5 — 12.22 =
a 43.58
b 68.12
c 43.68
d —67.02
e None
(91) ____

(92) 86.350 — 24.15 =
a 83.935
b 62.2
c 110.50
d 88.765
e None
(92) ____

(93) 57.09 — 7.0435 =
a 64.1335
b —26.655
c 50.0465
d 54.1335
e None
(93) ____

(94) 1/5 of 20 — 1/4 of 12 =
a 4/3
b 3/4
c 1
d 12
e None
(94) ____

(95)
5 da. 8 hr. 30 min.
—4 da. 10 hr. 40 min.
a 9 da. 19 hr. 70 min.
b 10 da. 7 hr. 10 min.
c 1 da. 11 hr. 50 min.
d 21 hr. 50 min.
e None
(95) ____

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. F Score (number right) .....

DIRECTIONS: Do these problems in multiplication. Then mark as you have been told the letter of each correct answer. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms.

TEST 4 — SECTION G

(96)

$$\begin{array}{r} 322 \\ \times\ \ 6 \\ \hline \end{array}$$

a 1932
b 328
c 316
d 1822
e None

(96) ____

(97)

$$\begin{array}{r} 200 \\ \times\ \ 5 \\ \hline \end{array}$$

a 205
b 1000
c 195
d 100
e None

(97) ____

(98)

$$\begin{array}{r} 706 \\ \times\ \ 8 \\ \hline \end{array}$$

a 714
b 698
c 5648
d 5608
e None

(98) ____

(99)

$$\begin{array}{r} 486 \\ \times\ 32 \\ \hline \end{array}$$

a 518
b 454
c $15\frac{3}{16}$
d 15552
e None

(99) ____

(100)

$$\begin{array}{r} 956 \\ \times\ 40 \\ \hline \end{array}$$

a 38240
b 996
c 916
d 3824
e None

(100) ____

(101)

$$\begin{array}{r} 500 \\ \times\ 30 \\ \hline \end{array}$$

a 530
b 15000
c 470
d $16\frac{2}{3}$
e None

(101) ____

(102)

$$\begin{array}{r} 2036 \\ \times\ 208 \\ \hline \end{array}$$

a 2244
b 1828
c 423488
d 56968
e None

(102) ____

(103) $4 \times \frac{1}{4} =$

a 1
b $4\frac{1}{4}$
c $\frac{1}{6}$
d $3\frac{3}{4}$
e None

(103) ____

(104) $\frac{1}{5} \times \frac{1}{5} =$

a $\frac{2}{5}$
b $\frac{1}{25}$
c $\frac{3}{10}$
d $\frac{1}{5}$
e None

(104) ____

(105) $\frac{1}{4} \times \frac{4}{5} =$

a $\frac{3}{20}$
b $\frac{5}{9}$
c $\frac{1}{5}$
d 1
e None

(105) ____

(106) $\frac{2}{3} \times \frac{6}{8} =$

a $-\frac{1}{12}$
b $1\frac{1}{24}$
c $\frac{8}{11}$
d $\frac{1}{2}$
e None

(106) ____

(107) $8 \times 2\frac{1}{4} =$

a 18
b $10\frac{1}{4}$
c $16\frac{1}{4}$
d $5\frac{3}{4}$
e None

(107) ____

(108) $8\frac{2}{3} \times \frac{2}{5} =$

a $\frac{51}{15}$
b $3\frac{7}{15}$
c $7\frac{14}{15}$
d $2\frac{2}{5}$
e None

(108) ____

(109) $6\frac{3}{4} \times 5\frac{1}{3} =$

a $11\frac{1}{7}$
b $30\frac{1}{4}$
c 36
d $30\frac{1}{12}$
e None

(109) ____

(110)

$$\begin{array}{r} 47\frac{3}{4} \\ \times 12 \\ \hline \end{array}$$

a $35\frac{3}{4}$
b $564\frac{37}{4}$
c $59\frac{3}{4}$
d 573
e None

(110) ____

(111)

$$\begin{array}{r} 35.75 \\ \times\ \ 3\frac{1}{5} \\ \hline \end{array}$$

a 114.4
b $35.78\frac{1}{5}$
c $35.71\frac{1}{5}$
d 7.15
e None

(111) ____

(112)

$$\begin{array}{r} 382.6 \\ \times\ \ 5 \\ \hline \end{array}$$

a 191.30
b 1913
c 383.1
d 382.1
e None

(112) ____

(113)

$$\begin{array}{r} 43.2 \\ \times .025 \\ \hline \end{array}$$

a 40.7
b 45.7
c 1.08
d 43.225
e None

(113) ____

(114) $5 \times 30\%$ of $30 =$

a 45
b 5
c 35
d 14
e None

(114) ____

(115)

2 yd. 5 ft. 6 in.
$\times\ 5$

a 19 yd. 3 ft. 6 in.
b 19 yd. 6 in.
c 10 yd. 25 ft. 30 in.
d 18 yd. 2 ft. 30 in.
e None

(115) ____

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. G Score
(number right).....

DIRECTIONS: Do these problems in division. Then mark as you have been told the letter of each correct answer. Finish each column before going on to the next. Be sure to express remainders as fractions and reduce fractions to lowest terms.

TEST 4 — SECTION H

(116) $4\overline{)32}$

a 8
b 128
c 28
d 36
e None

(116)

(117) $6\overline{)60}$

a 66
b 360
c 54
d 10
e None

(117)

(118) $5\overline{)455}$

a 450
b 91
c 460
d 2275
e None

(118)

(119) $4\overline{)424}$

a 428
b 16
c 420
d 106
e None

(119)

(120) $22\overline{)8932}$

a 8910
b 46
c 406
d 8954
e None

(120)

(121) $300\overline{)9000}$

a 300
b 30
c 9300
d 8700
e None

(121)

(122) $46\overline{)3476}$

a 3522
b 3430
c $75\frac{18}{23}$
d 159896
e None

(122)

(123) $1 \div \frac{1}{3} =$

a $1\frac{1}{3}$
b 3
c $\frac{2}{3}$
d $\frac{1}{3}$
e None

(123)

(124) $\frac{1}{2} \div 2 =$

a $1\frac{1}{2}$
b $2\frac{1}{2}$
c $\frac{1}{4}$
d 1
e None

(124)

(125) $6 \div \frac{4}{5} =$

a $6\frac{4}{5}$
b $7\frac{1}{2}$
c $5\frac{1}{4}$
d $4\frac{4}{5}$
e None

(125)

(126) $\frac{2}{3} \div \frac{2}{3} =$

a $\frac{4}{9}$
b $1\frac{1}{3}$
c 1
d 0
e None

(126)

(127) $\frac{5}{8} \div \frac{1}{4} =$

a $\frac{1}{2}$
b $2\frac{1}{2}$
c $\frac{5}{24}$
d $4\frac{4}{5}$
e None

(127)

(128) $5\frac{3}{8} \div \frac{3}{4} =$

a $7\frac{1}{8}$
b $2\frac{1}{2}$
c $\frac{160}{}$
d $53\frac{1}{3}$
e None

(128)

(129) $5\frac{2}{3} \div 2\frac{1}{4} =$

a 13
b $3\frac{5}{12}$
c $7\frac{11}{12}$
d $2\frac{14}{27}$
e None

(129)

(130) $150 \div 1\frac{1}{2} =$

a $151\frac{1}{2}$
b $148\frac{1}{2}$
c 100
d 225
e None

(130)

(131) $3\overline{)92\frac{3}{4}}$

a $95\frac{3}{4}$
b $89\frac{3}{4}$
c $30\frac{138}{144}$
d $30\frac{11}{12}$
e None

(131)

(132) $.03\overline{)9}$

a 3
b .27
c 300
d .03
e None

(132)

(133) $3\overline{)7.02}$

a 10.02
b 2.34
c 4.02
d 21.06
e None

(133)

(134) $.03\overline{).702}$

a .234
b 2.34
c 23.4
d 234.0
e None

(134)

(135) $\frac{1}{2}$ of $8 \div \frac{1}{3}$ of $6 =$

a 6
b 2
c —2
d 8
e None

(135)

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. H Score
(number right).....

Language

INSTRUCTIONS TO STUDENTS:

This is o language test. In taking it you will show what you know abou apitalization, punctuation, and words and sentences, and how well you can spell and write. No one can do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER

DIRECTIONS: In the sentences below the line, some of the letters with numbers above them should be capitals. Mark the number of each letter that should be a capital. Some lines may have more than one letter that should be a capital; others may have no such letter.

SAMPLE: A. His name is sam and he's my friend.

Correct Test Booklet Mark: 3 A

Correct Answer Sheet Mark: A 3

In Sample A the number 3 letter, s, in sam, should be a capital. Notice how the 3 has been marked.

TEST 5 — SECTION A

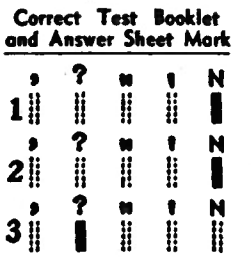
1. we shall travel east to Bagdad. _____ 1
2. Mary visited her aunt. they went to _____ 2
3. a show the first evening. _____ 3
4. The only correct abbreviation for september _____ 4
5. always has four letters, sept. _____ 5
6. Abraham lincoln's birthplace, kentucky, is very _____ 6
7. far from where he lived later. _____ 7
8. I read *Black beauty* and think it _____ 8
9. is a very good book. _____ 9
10. The last day of october is known to _____ 10
11. all of our people as hallowe'en. _____ 11
12. Beautiful france has a capital named paris. _____ 12
13. On sunday I started for the rocky Mountains _____ 13
14. to visit with my uncle Bill. _____ 14
15. Jack asked, "may you play ball today?" _____ 15

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. A Score (number right).....

DIRECTIONS: In the story below the line, numbers 16, 17, 18, etc., indicate places where punctuation may or may not be needed. In the answer row which has the number used in the story, make a black mark within the pair of dotted lines under the punctuation needed. If none is needed, mark N. Use the same answer row to show all punctuation needed at any one number in the story.

SAMPLE: B. Is$_1$ John coming$_2$ home$_3$



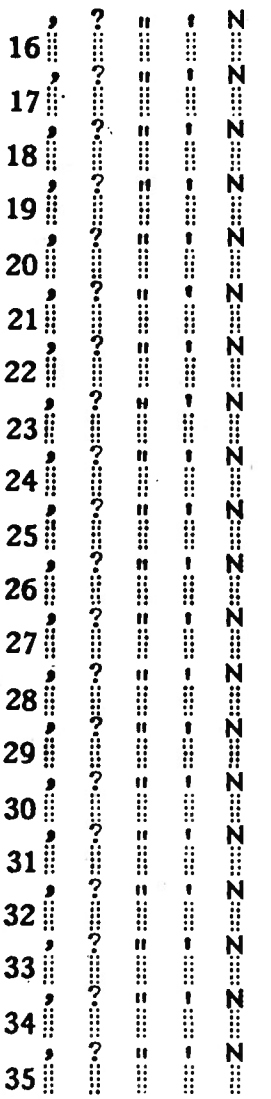
No punctuation is needed at 1 after the word, is, in Sample B, so a mark has been made under the N in answer row 1. A mark under N in answer row 2 shows that punctuation is not needed at 2 in the sample. A mark under the ? in answer row 3 shows the punctuation needed at 3 in the sample.

TEST 5 — SECTION B

Saturday,$_{16}$ on the way$_{17}$ back from a fishing trip$_{18}$ Jack$_{19}$ and Bill met Tom, who said$_{20}$ Where have you been$_{21}$"

"We$_{22}$ have been fishing$_{23}$ up at the lake$_{24}$ answered Bill.$_{25}$ "We caught some bass$_{26}$ trout, and perch."

Jack said$_{27}$ "Bill kept us$_{28}$ from drowning$_{29}$ too. We were$_{30}$ out in a canoe and I stood up.$_{31}$ The canoe began tipping and Bill yelled,$_{32}$ 'Sit down,$_{33}$ just as the canoe$_{34}$ was about$_{35}$ to tip over."



STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. B Score (number right).....

DIRECTIONS: In the following sentences, mark as you have been told the number of each correct word.

TEST 5 — SECTION C

36. (1 Hasn't 2 Haven't) the children come home yet? ____36

37. (1 Doesn't 2 Don't) the boy know it is dangerous to go into deep water? ____37

38. He (1 did 2 done) the work well. ____38

39. We were at the theater last night where we (1 saw 2 seen) some trained animals. ____39

40. He should (1 have gone 2 have went) home before six o'clock. ____40

41. Put (1 them 2 those) books on the table. ____41

42. The cake was given to (1 he 2 him) and Mary. ____42

43. Miss Sparks gave the basket of flowers to her and (1 I 2 me.) ____43

44. (1 Lay 2 Lie) still and rest until morning. ____44

45. The ball game started when the mayor (1 throwed 2 threw) the baseball onto the field. ____45

✓ **For each statement given below that is a complete sentence, mark YES; for each that is not, mark NO.**

46. As these men worked hard the previous day. **YES NO** 46

47. When the problem is one of addition. **YES NO** 47

48. The lake was surrounded by snow-covered hills. **YES NO** 48

49. After talking with the natives in the camp. **YES NO** 49

50. Running as hard as we could. **YES NO** 50

51. Great caravan routes lead to Damascus. **YES NO** 51

52. With the first breath of autumn. **YES NO** 52

53. Which in turn rests on logic. **YES NO** 53

54. To hold in mind a single line of reasoning requires higher types of thought than those which are involved in mastering a single statement. **YES NO** 54

55. When the pupil does not understand what he is aiming to accomplish in algebra or geometry and is carried along for a time by the demands of the teacher. **YES NO** 55

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

GO RIGHT ON TO THE NEXT COLUMN

Sec. C Score (number right).....

DIRECTIONS: Read the following sentence. Then consider how each individual word in that sentence is used in order that you may classify it as a part of speech. Mark the number which shows the classification of each word. If you do not know an answer, or if you think that none of the answers given is correct, mark the number, 5.

(56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70)
We walk in the park almost every afternoon and watch other small children feed doves

(71) (72) (73) (74) (75)
which perch on their shoulders.

TEST 5 — SECTION D

	WORDS	PARTS OF SPEECH					
56.	we	1 noun	2 pronoun	3 verb	4 adjective	5 None	____56
57.	walk	1 noun	2 verb	3 adjective	4 adverb	5 None	____57
58.	in	1 pronoun	2 adverb	3 conjunction	4 preposition	5 None	____58
59.	the	1 verb	2 adjective	3 adverb	4 conjunction	5 None	____59
60.	park	1 verb	2 noun	3 adjective	4 adverb	5 None	____60
61.	almost	1 noun	2 verb	3 adjective	4 adverb	5 None	____61
62.	every	1 noun	2 pronoun	3 adjective	4 adverb	5 None	____62
63.	afternoon	1 noun	2 verb	3 adjective	4 adverb	5 None	____63
64.	and	1 pronoun	2 adverb	3 conjunction	4 preposition	5 None	____64
65.	watch	1 noun	2 verb	3 adjective	4 adverb	5 None	____65
66.	other	1 noun	2 pronoun	3 adjective	4 adverb	5 None	____66
67.	small	1 noun	2 verb	3 adjective	4 adverb	5 None	____67
68.	children	1 noun	2 verb	3 adjective	4 adverb	5 None	____68
69.	feed	1 noun	2 verb	3 adjective	4 adverb	5 None	____69
70.	doves	1 noun	2 verb	3 adjective	4 adverb	5 None	____70
71.	which	1 verb	2 pronoun	3 conjunction	4 adjective	5 None	____71
72.	perch	1 noun	2 verb	3 adjective	4 adverb	5 None	____72
73.	on	1 pronoun	2 adjective	3 conjunction	4 preposition	5 None	____73
74.	their	1 noun	2 adjective	3 pronoun	4 adverb	5 None	____74
75.	shoulders	1 noun	2 verb	3 adjective	4 adverb	5 None	____75

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. D Score
(number right)_____

DIRECTIONS: Each line in this test contains four spelling words and the word, None. These words are numbered 1, 2, 3, 4, and the None is numbered 5. In some of the lines, one word is misspelled. In others, no word is misspelled. If there is a misspelled word, mark its number. If no word is misspelled, mark the 5.

	Correct Test Booklet Mark	Correct Answer Sheet Mark
SAMPLE: C. 1 now 2 just 3 come 4 ron 5 None	4 C	C 1 2 3 4 5
SAMPLE: D. 1 go 2 see 3 do 4 may 5 None	5 D	D 1 2 3 4 5

TEST 6

76.	1 score	2 rathur	3 lame	4 bitter	5 None	____ 76
77.	1 soak	2 really	3 escape	4 often	5 None	____ 77
78.	1 sipply	2 nature	3 loose	4 promise	5 None	____ 78
79.	1 split	2 elephunt	3 niece	4 sixty	5 None	____ 79
80.	1 entire	2 trout	3 losing	4 lisened	5 None	____ 80
81.	1 lantern	2 faint	3 motion	4 arrest	5 None	____ 81
82.	1 moral	2 sentury	3 haste	4 compel	5 None	____ 82
83.	1 tried	2 woolen	3 peech	4 shining	5 None	____ 83
84.	1 safety	2 dreamed	3 careless	4 unles	5 None	____ 84
85.	1 asist	2 special	3 weight	4 paddle	5 None	____ 85
86.	1 funny	2 takeing	3 until	4 alone	5 None	____ 86
87.	1 obedient	2 register	3 target	4 sesion	5 None	____ 87
88.	1 suburb	2 laboratory	3 carear	4 efficiency	5 None	____ 88
89.	1 pantry	2 wistle	3 insect	4 willow	5 None	____ 89
90.	1 mortal	2 salute	3 evidance	4 estate	5 None	____ 90
91.	1 moskuito	2 singular	3 hymn	4 drama	5 None	____ 91
92.	1 tangle	2 presence	3 intense	4 prairy	5 None	____ 92
93.	1 evil	2 detail	3 justise	4 amuse	5 None	____ 93
94.	1 foreign	2 examenation	3 accent	4 diamond	5 None	____ 94
95.	1 horrid	2 strain	3 orphan	4 investegate	5 None	____ 95
96.	1 lease	2 expand	3 misterious	4 cucumber	5 None	____ 96
97.	1 swich	2 paw	3 sleeve	4 noisy	5 None	____ 97
98.	1 disposition	2 brilliant	3 magnifecent	4 accord	5 None	____ 98
99.	1 remit	2 oxygan	3 interfere	4 delicious	5 None	____ 99
100.	1 stubborn	2 permanent	3 campain	4 indifferent	5 None	____ 100
101.	1 silence	2 vegtable	3 patient	4 mere	5 None	____ 101
102.	1 aerial	2 indevidual	3 exquisite	4 convict	5 None	____ 102
103.	1 scaucer	2 unable	3 sow	4 prison	5 None	____ 103
104.	1 amiable	2 seiges	3 beneficial	4 chaperon	5 None	____ 104
105.	1 strenuous	2 accrued	3 infamy	4 melencholy	5 None	____ 105

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Test 6 Score (number right).....

✓ Write the words which are pronounced.

1 _____

2 _____

3 _____

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Grade Placement .....

Intermediate

DIAGNOSTIC ANALYSIS OF LEARNING DIFFICULTIES

1. Reading Vocabulary

A. MATHEMATICS:
- 1-22 - - - - Basic vocabulary

B. SCIENCE:
- 23-45 - - - Basic vocabulary

C. SOCIAL SCIENCE:
- 46-68 - - - Basic vocabulary

D. GENERAL:
- 69-90 - - - Basic vocabulary

2. Reading Comprehension

E. FOLLOWING SPECIFIC DIRECTIONS:
- 91, 92 - - - Simple choice
- 93, 94, 95, 96, 97, 98, 99, 100 - Definitions and directions

F. REFERENCE SKILLS:
- 101, 102, 103, 104, 105 - Parts of book
- 106, 107 - - Table of contents
- 108, 109, 110 - Use of index
- 111, 112, 113, 114, 115 - Selecting references

G. INTERPRETATION OF MEANINGS:
- 116, 123, 130 - Topic or central idea
- 117, 118, 119, 122, 124, 127, 128, 129, 131, 132, 133, 135 - Directly stated facts
- 120, 121, 125, 126, 134, 136, 137 - Inferences
- 138, 139, 140, 141, - - Orgonization of topics
- 142, 143, 144, 145 - - Sequence of events

3. Arithmetic Reasoning

A. NUMBER CONCEPT:
- 1, 2, 3, 4, 5 - - - Writing numbers
- 6 - - - - - - Writing money
- 7 - - - - - - Writing per cent
- 8, 9, 10 - - - Roman numbers
- 11 - - - - - Whole numbers
- 12, 13, 14 - - Fractions and decimals
- 15 - - - - - Exponents

B. SYMBOLS AND RULES:
- 16, 17, 21, 22, 23, 24, 25 - - Symbols
- 18, 19, 20 - - Vocabulary
- 26, 27, 28, 29, 30 - - Rules

C. NUMBERS AND EQUATIONS:
- 31, 32, 33, 34, 35 - - Negative numbers
- 36, 37, 38, 39, 40 - - Solving equations

D. PROBLEMS:
- 41, 42, 43 - - Two-step
- 42, 43 - - - Sharing and averaging
- 44, 45, 46, 47 - - - Sq. and Cu. measure
- 48 - - - - - Ratio
- 49, 50, 51, 52 - - - Percentage
- 53, 54, 55 - - Commission and disc.

4. Arithmetic Fundamentals

E. ADDITION:
- 56, 57 - - - Simple combinations
- 58, 59, 60, 61 - - - Carrying
- 57, 60, 62 - - Zeros
- 59, 60, 61 - - Column addition
- 61, 62 - - - Adding money
- 63 - - - - - Adding numerators
- 64, 66, 67, 68, 69 - - Common denom.
- 65, 66, 67, 68, 69 - - Mixed numbers
- 70, 71 - - - Fractions and decimals
- 72, 73 - - - Writing decimals
- 74 - - - - - Adding percentages
- 75 - - - - - Denominate numbers

F. SUBTRACTION:
- 76, 77 - - - Simple combinations
- 78, 79, 80, 81, 82 - - Borrowing
- 77, 79, 80 Zeros
- 81, 82 - - - Subtracting money
- 83, 84 - - - Subtracting numerators
- 85, 86 - - - Common denom.
- 87 - - - - - Whole from mixed numbers
- 88, 89 - - - Borrowing, mixed numbers
- 90, 91 - - - Fractions and decimals
- 92, 93 - - - Writing decimals
- 94 - - - - - Fractional parts
- 95 - - - - - Denominate numbers

G. MULTIPLICATION:
- 96, 97, 98, 99, 100, 101, 102 - Tables
- 97, 98, 101 - - Zeros in multiplicand
- 100, 101, 102 - Zeros in multiplier
- 99, 100, 101 - Two-place multipliers
- 103, 105, 106 - Cancellation, fractions

G. MULTIPLICATION: (Cont.)
- 104 - - - - Mult. num. and denom.
- 107, 108, 109, 110 - - Mixed numbers
- 111 - - - - Fractions and decimals
- 112, 113 - - Pointing off decimals
- 114 - - - - Per cent of number
- 115 - - - - Denominate numbers

H. DIVISION:
- 116, 117, 118, 119, 120, 121, 122 - Tables
- 117, 119, 120, 121 - - Zeros in quotient
- 122 - - - - Remainders
- 122, 124, 125, 126, 127, 128, 129, 130 - Inverting divisors
- 128, 129, 130 Mixed numbers
- 131 - - - - Fractions to decimals
- 132, 133, 134 Pointing off decimals
- 135 - - - - Fractional parts

5. Mechanics of English, and Grammar

A. CAPITALIZATION:
- 1, 2 - - - - First word of sentence
- 5 - - - - - Abbrev. for months
- 6 - - - - - Names of persons
- 6, 12, 13 - - Names of places
- 4, 5, 10, 13 - - Days and months
- 8 - - - - - Title of book
- 14 - - - - - Title of person
- 11 - - - - - Special day
- 15 - - - - - First word of quotation
- - - - - - Over-capitalization

B. PUNCTUATION:
- 18, 20, 24, 26, 27, 29 - Commas
- 21 - - - - - Question marks
- 20, 24 - - - Quotation marks
- 33 - - - - - Quotation within quot.
- - - - - - Over-punctuation

C. WORDS AND SENTENCES:
- 36, 37 - - - Singulars and plurals
- 38, 39, 40 - - Tense
- 41, 42, 43 - - Case
- 44, 45 - - - Good usage
- 46-55 - - - Recognizing sentences

PARTS OF SPEECH:
- 60, 63, 68, 70 - - - Nouns
- 56, 71 - - Pronouns
- 57, 65, 69, 72 - - - Verbs
- 59, 62, 66, 67, 74 - Adjectives
- 61 - - - - - Adverbs
- 64 - - - - - Conjunctions
- 58, 73 - - - Prepositions

6. Spelling: (76-105) See profile

HANDWRITING: See profile

California Achievement Tests
intermediate GRADES 7-8-9 form AA

DEVISED BY ERNEST W. TIEGS AND WILLIS W. CLARK

Name ..... Last ..... First ..... Middle ..... Sex M-F

School or Organization ..... City ..... Date of Test ..... Month Day Year

Examiner ..... (.....) Student's Age ..... Date of Birth ..... Month Day Year

Occupation or Grade .....

See MANUAL for instructions.

TEST	SECTION	POSSIBLE SCORE	STUDENT'S SCORE
1. READING VOCABULARY	A. Mathematics	22	
	B. Science	23	
	C. Social Science	23	
	D. General	22	
	TOTAL (A+B+C+D)	90	
2. READING COMPREHENSION	E. Following Directions	10	
	F. Reference Skills	15	
	G. Interpretations	30	
	TOTAL (E+F+G)	55	
	TOTAL READING	145	
3. ARITHMETIC REASONING	A. Number Concept	15	
	B. Symbols and Rules	15	
	C. Numbers & Equations	10	
	D. Problems	15	
	TOTAL (A+B+C+D)	55	
4. ARITHMETIC FUNDAMENTALS	E. Addition	20	
	F. Subtraction	20	
	G. Multiplication	20	
	H. Division	20	
	TOTAL (E+F+G+H)	80	
	TOT. ARITHMETIC	135	
5. MECH. OF ENGLISH AND GRAMMAR	A. Capitalization	15	
	B. Punctuation	10	
	C. Words and Sentences	20	
	D. Parts of Speech	20	
	TOTAL (A+B+C+D)	65	
6. SPELLING	TOTAL SPELLING	30	
	TOTAL LANGUAGE	95	
	Handwriting		
	TOTAL TEST	375	

Grade Placement ..... Percentile Rank .....

DIAGNOSTIC PROFILE (Chart Student's Scores Here)

Grade Placement

4.0 5.0 6.0 7.0 8.0 9.0 10.0 11

10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85

20 30 40 50 60 70 80 90 100 110 120 135

2 4 6 8 10 12 14 18 20 24 28 30 34 38 42 44 46 48

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

7 10 15 20 30 40 50 60 70 80 90 100 110 120

15 20 25 30 35 40 45 50 55 60

2 4 6 8 10 12 14 16 18 20 22 24 26 27

20 25 30 35 40 45 50 55 60 65 70 75 80 85

50 80 105 135 165 185 225 250 285 320 335

4.0 5.0 6.0 7.0 8.0 9.0 10.0 11

Grade Placement

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Elementary • GRADES 4-5-6-7-8 • form AA

California Test of Personality

1953 Revision

Devised by

LOUIS P. THORPE, WILLIS W. CLARK, AND ERNEST W. TIEGS

Do not write or mark on this booklet unless told to do so by the examiner.

(CIRCLE ONE)

Name..... **Grade**..... **Boy** **Girl**
Last First Middle

School..... **City**..... **Date of Test**.....
Month Day Year

Examiner..... (.....) **Pupil's Age**..... **Date of Birth**.....
Month Day Year

INSTRUCTIONS TO PUPILS:

This booklet contains some questions which can be answered YES or NO. Your answers will show what you usually think, how you usually feel, or what you usually do about things. Work as fast as you can without making mistakes.

DO NOT TURN THIS PAGE UNTIL TOLD TO DO SO.

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9 8 7 6 5 4 3 2 1

INSTRUCTIONS TO PUPILS

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

You are to decide far each question whether the answer is YES or NO and mark it as you are tald. The fallowing are two sample questions:

SAMPLES

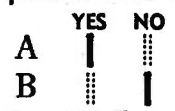
A. Do you have a dog at home? **YES NO**

B. Can you ride a bicycle? **YES NO**

DIRECTIONS FOR MARKING ANSWERS

ON ANSWER SHEETS

Make a heavy black mark under the ward YES or NO to show your answer. If you have a dog at home, yau would mark under the YES for question A as shown below. If yau cannot ride a bicycle, you would mark under the NO for questian B as shown below.



Remember, you mark under the ward that shows your answer. Now find Samples A and B on your answer sheet and show your answer for each by marking YES or NO. Do it now. Find answer row number 1 an yaur answer sheet. Now wait until the examiner tells you to begin.

ON TEST BOOKLETS

Draw a circle araund the word YES or NO, whichever shows your answer. If you have a dog at home, draw a circle around the word YES in Sample A above; if not, draw a circle araund the word NO. Do it now.

If you can ride a bicycle, draw a circle around the word YES in Sample B above; if not, draw a circle around the word NO. Do it now.

Now wait until the examiner tells you to begin.

After the examiner tells you to begin, go right on from one page to another until you have finished the test or are told to stop. Work as fast as you can without making mistakes. Now look at item 1 on page 3. Ready, begin.

SECTION 1 A

1. Do you usually keep at your work until it is done? YES NO
2. Do you usually apologize when you are wrong? YES NO
3. Do you help other boys and girls have a good time at parties? YES NO
4. Do you usually believe what other boys or girls tell you? YES NO
5. Is it easy for you to recite or talk in class? YES NO
6. When you have some free time, do you usually ask your parents or teacher what to do? YES NO
7. Do you usually go to bed on time, even when you wish to stay up? YES NO
8. Is it hard to do your work when someone blames you for something? YES NO
9. Can you often get boys and girls to do what you want them to? YES NO
10. Do your parents or teachers usually need to tell you to do your work? YES NO
11. If you are a boy, do you talk to new girls? If you are a girl, do you talk to new boys ? YES NO
12. Would you rather plan your own work than to have someone else plan it for you? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 A
(number right) .....

SECTION 1 B

13. Do your friends generally think that your ideas are good? YES NO
14. Do people often do nice things for you? YES NO
15. Do you wish that your father (or mother) had a better job? YES NO
16. Are your friends and classmates usually interested in the things you do? YES NO
17. Do your classmates seem to think that you are not a good friend? YES NO
18. Do your friends and classmates often want to help you? YES NO
19. Are you sometimes cheated when you trade things? YES NO
20. Do your classmates and friends usually feel that they know more than you do? YES NO
21. Do your folks seem to think that you are doing well? YES NO
22. Can you do most of the things you try? YES NO
23. Do people often think that you cannot do things very well? YES NO
24. Do most of your friends and classmates think you are bright? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 B
(number right) .....

SECTION 1 C

25. Do you feel that your folks boss you too much? YES NO

26. Are you allowed enough time to play? YES NO

27. May you usually bring your friends home when you want to? YES NO

28. Do others usually decide to which parties you may go? YES NO

29. May you usually do what you want to during your spare time? YES NO

30. Are you prevented from doing most of the things you want to? YES NO

31. Do your folks often stop you from going around with your friends? YES NO

32. Do you have a chance to see many new things? YES NO

33. Are you given some spending money? YES NO

34. Do your folks stop you from taking short walks with your friends? YES NO

35. Are you punished for lots of little things? YES NO

36. Do some people try to rule you so much that you don't like it? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 C
(number right) .....

SECTION 1 D

37. Do pets and animals make friends with you easily? YES NO

38. Are you proud of your school? YES NO

39. Do your classmates think you cannot do well in school? YES NO

40. Are you as well and strong as most boys and girls? YES NO

41. Are your cousins, aunts, uncles, or grandparents as nice as those of most of your friends? YES NO

42. Are the members of your family usually good to you? YES NO

43. Do you often think that nobody likes you? YES NO

44. Do you feel that most of your classmates are glad that you are a member of the class? YES NO

45. Do you have just a few friends? YES NO

46. Do you often wish you had some other parents? YES NO

47. Is it hard to find friends who will keep your secrets? YES NO

48. Do the boys and girls usually invite you to their parties? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 D
(number right) .....

SECTION 1 E

49. Have people often been so unfair that you gave up? YES NO

50. Would you rather stay away from most parties? YES NO

51. Does it make you shy to have everyone look at you when you enter a room? YES NO

52. Are you often greatly discouraged about many things that are important to you? YES NO

53. Do your friends or your work often make you worry? YES NO

54. Is your work often so hard that you stop trying? YES NO

55. Are people often so unkind or unfair that it makes you feel bad? YES NO

56. Do your friends or classmates often say or do things that hurt your feelings? YES NO

57. Do people often try to cheat you or do mean things to you? YES NO

58. Are you often with people who have so little interest in you that you feel lonesome? YES NO

59. Are your studies or your life so dull that you often think about many other things? YES NO

60. Are people often mean or unfair to you? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 1 E
(number right) .....

SECTION 1 F

61. Do you often have dizzy spells? YES NO

62. Do you often have bad dreams? YES NO

63. Do you often bite your fingernails? YES NO

64. Do you seem to have more headaches than most children? YES NO

65. Is it hard for you to keep from being restless much of the time? YES NO

66. Do you often find you are not hungry at meal time? YES NO

67. Do you catch cold easily? YES NO

68. Do you often feel tired before noon? YES NO

69. Do you believe that you have more bad dreams than most of the boys and girls? YES NO

70. Do you often feel sick to your stomach? YES NO

71. Do you often have sneezing spells? YES NO

72. Do your eyes hurt often? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 F
(number right) .....

SECTION 2 A

73. Is it all right to cheat in a game when the umpire is not looking? YES NO

74. Is it all right to disobey teachers if you think they are not fair to you? YES NO

75. Should one return things to people who won't return things they borrow? YES NO

76. Is it all right to take things you need if you have no money? YES NO

77. Is it necessary to thank those who have helped you? YES NO

78. Do children need to obey their fathers or mothers even when their friends tell them not to? YES NO

79. If a person finds something, does he have a right to keep it or sell it? YES NO

80. Do boys and girls need to do what their teachers say is right? YES NO

81. Should boys and girls ask their parents for permission to do things? YES NO

82. Should children be nice to people they don't like? YES NO

83. Is it all right for children to cry or whine when their parents keep them home from a show? YES NO

84. When people get sick or are in trouble, is it usually their own fault? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 A
(number right) .....

SECTION 2 B

85. Do you let people know you are right no matter what they say? YES NO

86. Do you try games at parties even if you haven't played them before? YES NO

87. Do you help new pupils to talk to other children? YES NO

88. Does it make you feel angry when you lose in games at parties? YES NO

89. Do you usually help other boys and girls have a good time? YES NO

90. Is it hard for you to talk to people as soon as you meet them? YES NO

91. Do you usually act friendly to people you do not like? YES NO

92. Do you often change your plans in order to help people? YES NO

93. Do you usually forget the names of people you meet? YES NO

94. Do the boys and girls seem to think you are nice to them? YES NO

95. Do you usually keep from showing your temper when you are angry? YES NO

96. Do you talk to new children at school? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 2 B
(number right) .....

SECTION 2 C

97. Do you like to scare or push smaller boys and girls? YES NO

98. Have unfair people often said that you made trouble for them? YES NO

99. Do you often make friends or classmates do things they don't want to? YES NO

100. Is it hard to make people remember how well you can do things? YES NO

101. Do people often act so mean that you have to be nasty to them? YES NO

102. Do you often have to make a "fuss" or "act up" to get what you deserve? YES NO

103. Is anyone at school so mean that you tear, or cut, or break things? YES NO

104. Are people often so unfair that you lose your temper? YES NO

105. Is someone at home so mean that you often have to quarrel? YES NO

106. Do you sometimes need something so much that it is all right to take it? YES NO

107. Do classmates often quarrel with you? YES NO

108. Do people often ask you to do such hard or foolish things that you won't do them? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 C
(number right) .....

SECTION 2 D

109. Do your folks seem to think that you are just as good as they are? YES NO

110. Do you have a hard time because it seems that your folks hardly ever have enough money? YES NO

111. Are you unhappy because your folks do not care about the things you like? YES NO

112. When your folks make you mind are they usually nice to you about it? YES NO

113. Do your folks often claim that you are not as nice to them as you should be? YES NO

114. Do you like both of your parents about the same? YES NO

115. Do you feel that your folks fuss at you instead of helping you? YES NO

116. Do you sometimes feel like running away from home? YES NO

117. Do you try to keep boys and girls away from your home because it isn't as nice as theirs? YES NO

118. Does it seem to you that your folks at home often treat you mean? YES NO

119. Do you feel that no one at home loves you? YES NO

120. Do you feel that too many people at home try to boss you? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 2 D
(number right) .....

SECTION 2 E

121. Do you think that the boys and girls at school like you as well as they should? YES NO

122. Do you think that the children would be happier if the teacher were not so strict? YES NO

123. Is it fun to do nice things for some of the other boys or girls? YES NO

124. Is school work so hard that you are afraid you will fail? YES NO

125. Do your schoolmates seem to think that you are nice to them? YES NO

126. Does it seem to you that some of the teachers "have it in for" pupils? YES NO

127. Do many of the children get along with the teacher much better than you do? YES NO

128. Would you like to stay home from school a lot if it were right to do so? YES NO

129. Are most of the boys and girls at school so bad that you try to stay away from them? YES NO

130. Have you found that some of the teachers do not like to be with the boys and girls? YES NO

131. Do many of the other boys or girls claim that they play games more fairly than you do? YES NO

132. Are the boys and girls at school usually nice to you? YES NO

GO RIGHT ON TO THE NEXT COLUMN

Section 2 E
(number right) _____

SECTION 2 F

133. Do you visit many of the interesting places near where you live? YES NO

134. Do you think there are too few interesting places near your home? YES NO

135. Do you sometimes do things to make the place in which you live look nicer? YES NO

136. Do you ever help clean up things near your home? YES NO

137. Do you take good care of your own pets or help with other people's pets? YES NO

138. Do you sometimes help other people? YES NO

139. Do you try to get your friends to obey the laws? YES NO

140. Do you help children keep away from places where they might get sick? YES NO

141. Do you dislike many of the people who live near your home? YES NO

142. Is it all right to do what you please if the police are not around? YES NO

143. Does it make you glad to see the people living near you get along fine? YES NO

144. Would you like to have things look better around your home? YES NO

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Section 2 F
(number right) _____